

AS300 Preparing to Upgrade Guide

IMPAX 4.5, 5.2, 5.3,
or WEB1000 to IMPAX 6.5.3

Preparing to Upgrade an AS300 Cluster
or to Migrate a WEB1000 Site to IMPAX 6.5.3

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(Topic number: 7696)

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Getting started

1

IMPAX 5.3 and earlier versions are quite different from IMPAX 6.0 and later versions. WEB1000 and IMPAX 6.5.3 also have a number of differences. These are important to understand.

Various software packages must be installed before IMPAX can be upgraded. Other documentation is available to provide details.

About this IMPAX Preparing to Upgrade Guide

(Topic number: 6608)

This manual is intended for service and administrative personnel who are preparing to upgrade an IMPAX AS300 (Windows) cluster meeting the following criteria to IMPAX 6.5.3:

| Criteria | Cluster currently using |
|---------------|---|
| IMPAX version | 4.5, 5.2.5, 5.3.1, or 5.3.2 |
| Database | SQL Server |
| Archive type | HSM or PACS Store and Remember archiving—no attached archives |



Note:

A site running IMPAX 4.5 can migrate its user data—passwords, IDs, and most preferences—to IMPAX 6.5.3. However, database data cannot be upgraded directly from IMPAX 4.5 to IMPAX 6.5.3. The IMPAX 4.5 database data and schema must first be upgraded to IMPAX 5.2.5, then to IMPAX 6.5.3. (This can be done during one upgrade, rather than in two separate upgrades.)

Information on performing the actual upgrade is available in the *AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

If the cluster meets the first two criteria listed in the table but is using a direct attached archive—such as CD-R, DVD-R, MOD, or DLT—then upgrade that cluster according to the procedures documented in the *AS300 Upgrade and DAA Consolidation Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

If upgrading from IMPAX 6.2.1 or later, refer to the *AS300 Upgrade Guide—IMPAX 6.2 or Later to IMPAX 6.5.3*.

New IMPAX concepts and functionality

(Topic number: 6684)

IMPAX 6.5.3 introduces:

- Support for all-in-one, single-server, and standalone configurations in a 64-bit environment, while running in a 32-bit emulation mode. (Because of technical constraints encountered when running on 32-bit operating systems, these configurations were not supported in IMPAX 6.5.2.)
- Platform updates include support for Windows Server 2008 R2 SP1, SQL Server 2008 R2 SP1 (upgrades only), and the retirement of several database and operating system platforms including Windows Server 2003 (32-bit and 64-bit), Windows Server 2008 (32-bit), SQL Server 2005, SQL Server 2008 (32-bit), and Oracle 11g for Windows (32-bit). As well, the standalone configuration on Windows XP is no longer supported.

For a more detailed list of new IMPAX 6.5.3 features and concepts, refer to:

- “New in IMPAX Client” (topic number 8102) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*
- “New in IMPAX Server” (topic number 60699) in the *IMPAX 6.5.3 Server Knowledge Base*
- “New in IMPAX Application Server” (topic number 11630) in the *IMPAX 6.5.3 Application Server Knowledge Base*

IMPAX 6.5.2 introduced:

- Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later) to synchronize study status notifications and claim and assign messages between the two clusters as if they were one
- Profile Replication, which allows replication of user and resource permissions and preferences across multiple IMPAX clusters
- Support for adding a rationalized RBAC (role-based access control) model to the IMPAX ADAM database and removing the non-rationalized model at a later date
- Support for Solaris zones partitioning technology, which virtualizes operating system services and provides an isolated and secure environment for running applications (new installations only)

IMPAX 6.5.1 included:

- Improved speech synchronization in IMPAX Reporting
- Instant Messaging to easily connect with colleagues
- Validation of new speechmikes with IMPAX 6.5.1
- The ability to control local configuration of stations in various locations (such as home or work)
- The introduction of the Agfa Web Service Portal (Service Portal), a web-based tool used to support, maintain, and monitor the IMPAX system

IMPAX 6.5 included:

- Enhanced snapshot functionality
- Enhanced embedded IMPAX Reporting
- An updated Spine Annotation tool
- Additional support for free-text study and voice comments
- Enhanced scheduled worklist functionality
- Enhanced breast imaging

It also included IMPAX Results Viewer, a browser-based IMPAX client designed to enable efficient distribution of medical images and reports for referring physicians and other healthcare professionals.

Platform updates included support for Windows 7, Windows Server 2008, SQL Server 2008, and Solaris Live Upgrade. A hierarchical cache structure was implemented for image and web caches, permitting larger cache volumes. A cache migration tool was also included in the standard IMPAX install packages.

IMPAX 6.4 included:

- Significantly improved CT and MR study navigation
- IMPAX Reporting enhancements
- Improved study comments and support for voice comments
- Enhanced mammography features
- New Client administration features

Platform updates included support for Windows Vista (Client only), SQL Server 2005, and Oracle for Windows. Additional Server migration tools were also provided.

IMPAX 6.3 included multi-cluster functionality, which provides a patient-centric view across hospitals within several sites. Additional new features, such as streamlined Application Server updates, IMPAX Reporting dictation, and configurable simple Search, were provided in the IMPAX 6.3.1 release.

IMPAX 6.2 built on the IMPAX 6.0 foundation to deliver new mammography and user administration features, along with some Image area enhancements.

IMPAX 6.0 and later were introduced as next-generation PACS systems. Compared with previous versions of IMPAX (5.3 and earlier), the IMPAX Client included:

- A new user interface and architecture
- Installation through a browser download
- Tighter integration with the IMPAX RIS software
- RIS information in a new Text area
- Better integration with the TalkStation and IMPAX Reporting software

IMPAX 6.0 also introduced new server components:

- Application Server—An intermediary that separates Clients from the Database Server and other IMPAX Server components
- Curator—Converts study images to a compressed wavelet format
- Connectivity Manager—Replaces PACS Broker or RIS Gateway in the cluster

Key differences between WEB1000 and IMPAX 6.5.3

(Topic number: 6664)

The following table highlights the major differences between WEB1000 and IMPAX 6.5.3:

| WEB1000 | IMPAX 6.5.3 |
|-----------------------------------|---|
| Search Wizards | Worklists A worklist is a collection of patients and their studies. For radiologists, the worklist is analogous to a pile of film jackets. They use the worklist to know which studies they must interpret during a specific time period. For technologists, a worklist is a list of the studies they must perform at specific times for each patient. |
| Teams | Roles A role is a collection of users or other roles that holds permissions and preferences as well as licensing options. For example, a role can represent the enterprise, the institution, a department, or a team. |
| Thumbnail navigation area | Thumbnails are displayed in the Available Series palette in the Image area. |
| Minimal conferencing capabilities | No conferencing capabilities |

For a complete list of differences, see “WEB1000 and IMPAX 6.5.3 feature comparison” (topic number 55002) in the *IMPAX Migrations Reference Guide*.

Valid IMPAX upgrade paths

(Topic number: 6607)

Sites can upgrade to IMPAX 6.5.3 from any of these versions of IMPAX (supported versions include any applicable SUs):

- IMPAX 5.2.5—hereafter referred to as IMPAX 5.2
- IMPAX 5.3.1 and 5.3.2—hereafter referred to as IMPAX 5.3
- IMPAX 6.2.1—hereafter referred to as IMPAX 6.2
- IMPAX 6.3.1—hereafter referred to as IMPAX 6.3
- IMPAX 6.4
- IMPAX 6.5, 6.5.1, and 6.5.2

For more detailed information, refer to the *IMPAX 5.x–6.x Service Update and Hot Fix Migration Paths* spreadsheet in the Additional documents section of the IMPAX Knowledge Base > Main Knowledge Base Page.

A site running IMPAX 4.5 can migrate its user data—passwords, IDs, and most preferences—to IMPAX 6.5.3. However, database data cannot be upgraded directly from IMPAX 4.5 to IMPAX 6.5.3. The IMPAX 4.5 database data and schema must first be upgraded to IMPAX 5.2, then to IMPAX 6.5.3. (This can be done during one upgrade, rather than in two separate upgrades.)



Important!

We recommend checking the migration log file after each leg of an upgrade before moving on to the next leg.

For AS300 (Windows) upgrades, also consider the following:

- Since all IMPAX 6.5.3 AS300 servers and Application Servers must be installed on Windows Server 2008 R2 SP1, all upgrades to IMPAX 6.5.3 require forklift upgrades to new or restaged hardware. All AS300 servers and Application Servers in a cluster must use the same operating system. For details on installing Windows Server 2008 R2 SP1, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.
- For IMPAX AS300 upgrades, if you are currently on SQL Server 2000 or later, and you want to continue using SQL Server, you must do a forklift upgrade onto new or restaged hardware installed with SQL Server 2008 R2 SP1. For details on installing SQL Server 2008 R2 SP1, refer to *Installing SQL Server 2008 R2* (refer to page 42).
- To migrate an IMPAX AS300 cluster from SQL Server to Oracle, contact Agfa Professional Services for assistance. This migration process is not documented in this guide.

For Oracle upgrades, the following considerations apply:

- To migrate an IMPAX cluster from Oracle for Solaris to Oracle on Windows, contact Agfa Professional Services for assistance. This migration process is not documented in this guide.
- If performing a forklift upgrade, ensure that you install the same Oracle edition as the existing production system or else the database migration will fail. For example, if the database on the production system is Oracle Standard Edition, install Oracle Standard Edition when staging the new system. Or, if the database on the production system is Oracle Enterprise Edition, install Oracle Enterprise Edition when staging the new system.

Valid cluster configurations

(Topic number: 10763)

For cluster configurations, the following upgrade paths are supported:

- Current single-cluster configuration to equivalent single-cluster configuration
- Single-host AS300 to multi-host AS300
- Multi-cluster configuration to multi-cluster configuration

The following should be considered:

- Virtual machines allow you to share the physical resources of a single computer across multiple environments. As of IMPAX 6.5, all new standalone stations are installed using VMware Player.
- When considering whether to move from a single-host to a multi-host or mixed-host configuration, assess the current performance of the system. If it is barely acceptable, you may want to upgrade the configuration to achieve better performance.
- When upgrading from a single-host to a multi-host or mixed-host configuration, consider the size of and expected load for each server to take advantage of the additional servers. For example, moving the Curator component to its own server is generally more beneficial than moving the Network Gateway component to its own server.
- HSM and PACS Store and Remember archives can be upgraded to IMPAX 6.5.3. Direct attached archives (DAA) cannot. Migration tools and procedures exist for converting these types of archives to those supported in IMPAX 6.5.3. See the appropriate DAA consolidation guide, for more information.

If your IMPAX configuration is not listed, contact Agfa Professional Services.

Understanding parallel migration

(Topic number: 123301)

With a serial migration, upgrades from one version of IMPAX to another have two distinct phases:

1. A preparing to upgrade period, which can last weeks, during which initial installations are performed, some data is migrated in advance, and users are trained on the new system.

2. An upgrade period, typically performed over a weekend, during which the IMPAX software and database are upgraded from the previous to the new version.

After the upgrade period, users switch over to using the new version exclusively.

With a parallel migration, by contrast, both the previous and the upgraded versions of IMPAX run simultaneously for a period of time, which could last weeks or months. Cluster linking is deployed to keep the two clusters in synchronicity with each other. Parallel migrations require that a new Database Server be deployed (rather than upgrading the existing one). Downtime is greatly reduced, and users transition more gradually from the previous system to the new version.

When using direct attached archives, it can take a long time to move the archive data from that system to a new HSM archive. Therefore, it becomes necessary to use a parallel migration approach. (Direct attached archives are not supported in IMPAX 6.5.3.)

DAA consolidation

(Topic number: 123304)

A Direct Attached Archive (DAA) is a non-networked long-term storage device directly connected to a server. IMPAX 6.4 and later versions do not support DAA. Therefore, all legacy IMPAX systems with DAA that upgrade to IMPAX 6.5.3 must migrate the obsolete DAA to a network-based archive; that is, to DICOM PACS Store and Remember or to HSM archiving.

Different methods exist of transitioning the legacy IMPAX cluster to the new archiving method. Tools are available to aid in the effort.

Parallel Migration Tool Set (PMTS) and Volume Migration Tool (VMT)

(Topic number: 124892)

With any IMPAX upgrade, you must use some of the tools and scripts included with the IMPAX 6.5.3 Migration Toolbox to extract relevant database information and upgrade the database schema. The IMPAX migration tools are in a dedicated Migration CD ISO.

When having to convert DAA (direct attached archive) entries—no longer supported in IMPAX 6.5.3—to PACS Store and Remember and HSM archiving (which is supported), two additional tools are required:

1. Parallel Migration Tool Set (PMTS), which includes scripts to convert DAA entries to PACS Store and Remember archiving, and which de-references and re-references all of the cache and archive locations, and update all relevant database tables.
2. Volume Migration Tool (VMT), which performs the archive migration from the direct attached archive to HSM.

These tools are available from Agfa. They are not distributed with IMPAX.

When a DAA consolidation involves two IMPAX clusters (in a parallel migration), the DAA library serves as the legacy archive, while the Hierarchical Storage Management (HSM) server functions as the new archive. The DAA entries are converted to PACS Store and Remember on the new IMPAX 6.5.3 system, and the Volume Migration Tool (VMT) is used to perform the archive migration from the DAA to HSM.

Any new hardware must be staged with the latest version of IMPAX 6.5.3 for the upgrade to work. To configure and stage the IMPAX 6.5.3 cluster, including the Database Server, Application Server, Curator, new Network Gateways or new HSM Servers, and Clients, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

After having installed the tool set, all necessary files are copied to the system in C:\mvf\bin.



Note:

The host name of the new IMPAX 6.5.3 Database Server should be different from the existing IMPAX Database Server. The host name of the new Database Server can be identical to the production Database Server only when the existing system is not operating in parallel with the new system. For example, when the production system is taken offline after the cold backup is taken and restored on the new hardware.

IMPAX upgrade strategy

(Topic number: 10757)

If not using a parallel migration strategy (refer to page 13) (required in some cases), upgrade and migration activities take place in three phases: preparing to upgrade, upgrade, and post-upgrade.

IMPAX preparing to upgrade period: Upgrades from IMPAX 5.3 and earlier

(Topic number: 10681)

The preparing to upgrade phase can last several weeks. During this time, the current system is analyzed to determine the best upgrade procedure to use. The IMPAX Migration Tools are used to diagnose the current system, to export and migrate user data (for 5.2 and 5.3 upgrades), and to test the migration in advance. In some scenarios, preliminary installations or upgrades are performed.

For upgrades from IMPAX 5.2 or 5.3, most user data can be exported, but only some of it can be migrated into 6.5.3.

Key items that can be migrated include:

- Print preferences
- Keyboard shortcuts
- Study data such as keywords and study comments

- Image area wizards
- Hanging protocols
- Comparative review modes
- Teaching file folders

Key items that are not migrated include:

- Worklists
- Select wizards
- Search and transmit locations
- Tools and toolbar settings
- Screen formats
- Modality preferences
- Window level presets
- Permissions to teaching file folders
- Markup for key images, only the original images retain the markup

Details are available in *IMPAX 5.2 preferences migrated to IMPAX 6.5.3* (refer to page 118).

IMPAX upgrade period: IMPAX 5.2 or 5.3 upgrades

(Topic number: 10759)

During this phase, the IMPAX Server components are upgraded, the IMPAX database is migrated, and the IMPAX Clients are upgraded. Some downtime usually occurs here; how long depends on the site size, the type of backup done, and whether and how training and traveling servers are used. For example, downtime can be anywhere from two to four days, and possibly spread over two weekends.

IMPAX post-upgrade period

(Topic number: 10761)

This phase begins once all the Server components, the Application Server, and a critical mass of Clients are running with the updated software and databases. During this phase, certain tests are run and initial configuration tasks are performed. These activities may begin during the “upgrade weekend” and continue for some days afterward.

Valid WEB1000 migration paths and transition strategy

(Topic number: 6606)

A site running WEB1000 or a combination of WEB1000 and IMPAX can transition its WEB1000 users to IMPAX 6.5.3. You can migrate from the following versions of WEB1000:

- WEB1000 4.1
- WEB1000 5.0
- WEB1000 5.1

WEB1000 migrated features

(Topic number: 6658)

The IMPAX Migration Tools include a utility for *exporting* the following:

- User IDs
- Access control information such as privilege levels (such as Clinician), access control groups (such as Exhibit), and access control features (such as STUDY.VIEW_IMAGES)
- Team information

The utility can also *migrate* the following WEB1000 features to the IMPAX 6.5.3 database:

- User IDs
- Privilege levels, which are mapped to IMPAX roles

Not migrated are the following WEB1000 features:

- Team information—This information can be *exported*, however, and the exported data can be used to create equivalent IMPAX 6.5.3 roles.
- Access control groups and features—This information can be *exported*, however, and the exported data can be used to assign equivalent permissions and operations to IMPAX 6.5.3 roles.
- User preferences—The user interface varies too much between WEB1000 and IMPAX 6.5.3 for this migration to be viable.
- Web cache.
- Data Currency.
- EPR integration—Fundamental technology and architectural differences exist between the WEB1000 and IMPAX 6.5.3 EPR integrations.

For a more detailed list of the differences between WEB1000 and IMPAX, refer to “WEB1000 and IMPAX 6.5.3 feature comparison” (topic number 55002) in the *IMPAX Migrations Reference Guide*.

WEB1000 transition strategy

(Topic number: 6610)

In most cases, the process of moving WEB1000 users to IMPAX 6.5.3 is a gradual one, taking place over months. The WEB1000 Server itself is never upgraded to an IMPAX 6.5.3 Server. Instead, both systems coexist for a time, until it is feasible to move all WEB1000 users to IMPAX 6.5.3.

This strategy is based on the following assumptions:

- Access to recent studies in the WEB1000 web cache occurs frequently, while access to older studies is infrequent.
- When older studies are needed, they can be retrieved from the archive. This results in some delay, which users have found acceptable.
- Metadata from WEB1000 is transient.
- Amount of WEB1000 web cache space is limited; therefore, the age of the studies stored in that cache is limited.

If some of these assumptions are not true for a particular site, adapt the strategy as needed to meet the needs of that site.

Phase 1: Pre-Migration period

(Topic number: 6644)

WEB1000 and IMPAX 5.2 or 5.3 (if also used at the site) function normally. Each operates as a separate system with its own set of data. Based on routing rules, IMPAX routes images to WEB1000. Data Currency keeps the study information synchronized between IMPAX and WEB1000 by propagating WEB1000 changes to IMPAX.

During this period, WEB1000 user IDs, privilege levels, access control groups and features, and team information are exported for analysis and planning. WEB1000 user IDs and privilege levels are migrated into an ADAM database for future use in IMPAX 6.5.3.

Phase 2: IMPAX 6.5.3 upgrade

(Topic number: 6643)

If IMPAX 5.2 or 5.3 is also used at the site, at some point its servers and clients are upgraded to IMPAX 6.5.3. No changes are made to the WEB1000 Clients and Server.

For WEB1000-only sites, IMPAX 6.5.3 Clients and Servers are installed. No changes are made to the WEB1000 Clients and Server. The Data Currency service is stopped, as it is not compatible with IMPAX 6.5.3.

Phase 3: IMPAX 6.5.3 and WEB1000 coexistence

(Topic number: 6642)

IMPAX 6.5.3 and WEB1000 run as separate systems, but with image routing based on IMPAX routing rules. However, data currency does not exist, so data does not remain synchronized between IMPAX 6.5.3 and WEB1000.

WEB1000 users start to be trained on the IMPAX 6.5.3 system.

Phase 4: Initial set of WEB1000 users switch to IMPAX 6.5.3

(Topic number: 6641)

After two months of operation (for example), two months' worth of new studies have been sent to IMPAX 6.5.3 and curated to the IMPAX 6.5.3 web cache. The relevant priors for the new studies have been retrieved from archive and curated to the IMPAX 6.5.3 web cache.

At this point, some WEB1000 users can begin to use IMPAX 6.5.3 instead. Unavailable studies have to be retrieved from archive and be curated, which causes a delay.

Phase 5: More WEB1000 users switch to IMPAX 6.5.3

(Topic number: 6640)

The situation is the same as detailed previously, except that fewer studies should be unavailable to the IMPAX 6.5.3 system. More WEB1000 users start using IMPAX 6.5.3.

Phase 6: Transition complete

(Topic number: 6639)

All WEB1000 users switch to the IMPAX 6.5.3 system—ideally when all data in the WEB1000 web cache is also in the IMPAX 6.5.3 web cache. At this point, the site can stop routing studies to WEB1000 and WEB1000 can be decommissioned.

Developing a core server plan

(Topic number: 6708)

We recommend specific hardware and software for the various IMPAX 6.5.3 cluster components. Use these requirements to assess which existing servers to keep and upgrade, and which to replace with new servers. Based on the requirements in *IMPAX hardware and software requirements* (refer to page 32) assess your current IMPAX server stations. List which hardware and software components on these stations must be upgraded to make the station function with the IMPAX 6.5.3 software.

Compare the time and costs of these upgrades against the time and cost involved in purchasing new hardware and installing the appropriate software on it. Use this to determine which stations you will reuse and which will be replaced.

Also consider site performance—measure the time to acquire the first image. If current performance is inadequate or borderline, this may be another reason to replace some of the equipment.



Note:

If upgrading a site using direct attached archives, refer to the *AS300 Upgrade and DAA Consolidation Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

If upgrading a WEB1000-only site, you must install all IMPAX 6.5.3 software on new (or redeployed) servers. You cannot upgrade WEB1000 servers to IMPAX 6.5.3 servers.

Assessing cluster configurations

(Topic number: 6723)

Then consider your cluster configuration. If currently using a standalone, single-server, or single-host Server configuration, you could consider switching to a multi-host configuration (where each Server component is installed on its own station) to improve performance. For supported upgrade configurations, refer to *Valid cluster configurations* (refer to page 13).

If your site is part of a multi-cluster configuration, more study and report data will be coming through than if it were not. Therefore, ensure that the cluster configuration you select will meet these data requirements.

Defining Curator configuration

(Topic number: 9938)

The IMPAX Curator process is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. Wavelet images are displayed progressively, which often results in faster image display. Curator is an optional component, but is beneficial for most sites.

You must decide whether to install Curator with other AS300 server components (for example, on a Network Gateway station) or on a dedicated server. You can also distribute the load amongst multiple Curator servers. For 5.2 and 5.3 upgrades, we recommend that the new Curator server be used in the training server cluster during the preparing to upgrade period. Curator runs only on the Windows operating system, not on Solaris.

For more Curator information, refer to the *IMPAX 6.5.3 Curator and CD Export Server Installation Guide* and the Curator component of the *IMPAX 6.5.3 Server Knowledge Base*.

Communicating upgrade plans

(Topic number: 9924)

Upgrading a site to IMPAX 6.5.3 from IMPAX 5.3 or earlier is a big undertaking. Ensure that the site personnel understand the major architectural differences between IMPAX 6.5.3 and IMPAX 5.3

and earlier. Hold a kick-off meeting for the key stakeholders in the upgrade to explain this and to identify:

- Site requirements
- Preparations required for success
- Expectations and responsibilities
- Upgrade project milestones

Document the decisions made at the kick-off meeting and deliver these to the site's primary project sponsor.

Next, develop a communication plan with the PACS Administrator to ensure that project schedules, expected changes, and other important information is effectively conveyed to affected personnel at the site. Also inform the Agfa GSN group about any expected down times.

IMPAX data stored in AD LDS and MVF databases

(Topic number: 48414)

Part of the migration process from IMPAX 5.2 or 5.3 is to move some data from the MVF database that resides on the IMPAX Database Server to the AD LDS (Windows Server 2008) database that resides on the new IMPAX Application Server. This topic gives an overview of what data is transitioned to AD LDS .

In general, user data is stored in AD LDS, while study data is stored in MVF. For example, the following data is stored in AD LDS:

- User IDs and passwords, except for external LDAP users. For LDAP users, that information is stored in LDAP, and a mapping to this information is stored in AD LDS.
- User permissions (operations and study status flags).
- User licenses.
- User and role preferences set in the Client Configure area settings.
- Image area user profile settings.
- User preferences for the List and Text area (such as which panels are displayed in the Text area).
- Image area wizards and List area script wizards.
- Station, container, and station container configurations.

Among the information that remains in the MVF database is the following:

- Printer configurations
- Study keywords
- Enumerated values

- Study comments

Related documentation

(Topic number: 6634)

IMPAX includes documentation for IMPAX Client, IMPAX Application Server, and IMPAX Server. The documentation is released on its own DVD. This DVD includes the Upgrade Guides along with the IMPAX 6.5.3 Knowledge Bases, Installation and Configuration Guides, and Quick References.

The documentation eventually must be installed on an IMPAX 6.5.3 Application Server. In the interim, however, the documentation can be installed on any Windows-based computer or be viewed right on the DVD.

The default.htm file at the root of the Documentation DVD and the installation directory links to all available documentation.

Opening the IMPAX Client Knowledge Base

(Topic number: 57452)

The IMPAX 6.5.3 Client Knowledge Base: Extended is a comprehensive set of information that details how radiologists, clinicians, specialists, and PACS administrators configure and use the IMPAX Client software. The Knowledge Base provides targeted getting started information, concepts, and tasks for various user groups, and focuses on task-based and workflow-based information.

The IMPAX Client Knowledge Base: Core is available in 21 languages. The IMPAX 6.5.3 Client Knowledge Base: Extended is available in English. Any or all languages can optionally be installed and can be viewed on the Documentation DVD.

Viewing the Client Knowledge Base from the documentation DVD

(Topic number: 57437)

All IMPAX Knowledge Bases, including the IMPAX Client Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Client Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to /docs/client/knowledge_base.
3. Double-click **default.htm**.
4. Select the appropriate language for the IMPAX Client Knowledge Base.

Opening the Client Knowledge Base from the List, Text, or Configure area

(Topic number: 57440)

Once the IMPAX documentation is installed, you can access it from the IMPAX Client application.

To open the Client Knowledge Base from the List, Text, or Configure area

1. Press **F1**.

or

From the List or Configure area bar, click **Help**.

The home (or main) page of the Client Knowledge Base opens in a browser window. It normally appears in the same language used for the IMPAX interface; for example, if working with IMPAX in French, the French Knowledge Base opens. If the Knowledge Base is not available in the interface language (usually because that Knowledge Base was not installed), you must manually redirect the URL to the English Knowledge each time you open the Knowledge Base.

Opening the IMPAX 6.5.3 Application Server Knowledge Base

(Topic number: 40098)

This Knowledge Base covers how to configure and maintain the IMPAX Application Server.

Viewing the Application Server Knowledge Base from the documentation DVD

(Topic number: 58005)

All IMPAX Knowledge Bases, including the IMPAX 6.5.3 Application Server Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Application Server Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to `/docs/appserver/knowledge_base`.
3. Double-click **default.htm**.

Opening the IMPAX 6.5.3 Application Server Knowledge Base from the Configuration Tool software

(Topic number: 57999)

Once the IMPAX documentation is installed, you can access the IMPAX 6.5.3 Application Server Knowledge Base from the Business Services Configuration Tool software.

To open the IMPAX 6.5.3 Application Server Knowledge Base from the Configuration Tool software

1. Select **Start > All Programs > Agfa HealthCare > Business Services > Configuration Tool**.
2. In the Business Services Configuration Tool, click **Help**.

Opening the IMPAX 6.5.3 Server Knowledge Base

(Topic number: 11528)

The IMPAX 6.5.3 Server Knowledge Base is a reference tool for PACS IT specialists and clinical coordinators, field engineers, and technical launch team members, primarily to help them understand and use the components of the IMPAX cluster. The Understanding IMPAX Server section provides a basic understanding of the IMPAX system and introduces users to key components and concepts.

Viewing the Server Knowledge Base from the documentation DVD

(Topic number: 57901)

All IMPAX Knowledge Bases, including the IMPAX Server Knowledge Base, can be viewed directly from the IMPAX documentation DVD.

To view the Server Knowledge Base from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to `/docs/server/knowledge_base`.
3. Double-click **default.htm**.

Opening the Server Knowledge Base from the Administration Tools

(Topic number: 57892)

Once the IMPAX documentation is installed, you can access it from the IMPAX Administration Tools interface.

To open the Server Knowledge Base from the Administration Tools

1. Select **Help > Help URL**.
A new browser window opens and loads the IMPAX Documentation page.
2. Under Knowledge Bases, click the **IMPAX Server Knowledge Base** link.

IMPAX installation, configuration, and upgrade guides

(Topic number: 6677)

These PDF guides are intended for service and administrative personnel. They contain all the information needed to install, upgrade, and configure an IMPAX cluster.



Note:

To view the IMPAX PDF guides on a computer, Adobe Reader must be installed.

Opening a PDF guide from the documentation DVD

(Topic number: 57808)

All IMPAX guides can be viewed directly from the IMPAX documentation DVD.

To open a PDF guide from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to **/docs/{server | appserver | client}/guides**.
3. Double-click the file name of the PDF guide.

Opening a PDF guide from where the documentation is installed

(Topic number: 57811)

Once the IMPAX documentation is installed, you can access the PDF guides from a connected computer.

To open a PDF guide from where the documentation is installed

1. Open a browser window.
2. Navigate to **https://application_server_name/documents/**
where **application_server_name** is the name of the server where the IMPAX documentation is installed.
3. Under Upgrade and migration or Installation and configuration, click the title of the guide to view.

IMPAX Client guide

(Topic number: 6680)

| Title | File name | Provides instructions on |
|---|--------------------------|---|
| IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide | impax_client_install.pdf | <ul style="list-style-type: none">• Installing the IMPAX Client and related software in a standard configuration• Upgrading the IMPAX 5.2, 5.3, or 6.2 or later Client workstation to IMPAX 6.5.3• Initially configuring the Client |

IMPAX Application Server guide

(Topic number: 6683)

| Title | File name | Provides instructions on |
|---|--------------------------------------|--|
| IMPAX 6.5.3 Application Server Installation, Upgrade, and Configuration Guide | impax_application_server_install.pdf | <ul style="list-style-type: none">• Installing the operating system, IMPAX documentation, and IMPAX Application Server software• Upgrading the Application Server to IMPAX 6.5.3• Initial configuration of the IMPAX Business Services and other post-installation configuration tasks |

IMPAX Server guides

(Topic number: 6673)

| Title | File name | Provides instructions on |
|---|---|--|
| AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3 | impax-as300-5x-preparing-to-upgrade.pdf | Preparing to upgrade an IMPAX 4.5, 5.2, or 5.3 cluster using HSM or PACS Store and Remember archives to IMPAX 6.5.3, and how to transition from WEB1000 to IMPAX 6.5.3. Covers AS300 clusters. If these preliminary tasks are not performed, the upgrade will not succeed. |
| AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3 | impax-as300-5x-upgrade.pdf | Upgrading an IMPAX 5.2 or 5.3 cluster to an IMPAX 6.5.3 AS300 host. |
| AS300 Upgrade and DAA Consolidation Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3 | impax-as300-5x-daa-upgrade.pdf | Upgrading an IMPAX 4.5, 5.2, or 5.3 cluster using direct attached archives to IMPAX 6.5.3, using a parallel migration approach. |
| IMPAX 6.5.3 AS300 Installation and Configuration Guide | impax-as300-install.pdf | Installing and initially configuring hardware and software on AS300 Database, Archive, and Network Gateway |

| Title | File name | Provides instructions on |
|---|------------------------------|--|
| | | servers. This guide covers single-server, all-in-one, single-host, and multi-host configurations. |
| IMPAX 6.5.3 Curator and CD Export Server Installation Guide | impax-curator-install.pdf | Installing and initially configuring the Curator and the CD Export server. |
| IMPAX 6.5.3 Standalone Installation and Configuration Guide | impax-standalone-install.pdf | Installing and initially configuring an IMPAX standalone station. A standalone station has IMPAX Client, Application Server, and Server components installed on a single computer. |
| IMPAX 6.5.3 Standalone Upgrade Guide | impax-standalone-upgrade.pdf | Upgrading an IMPAX standalone station. A standalone station has IMPAX Client, Application Server, and Server components installed on a single computer. |

IMPAX Migrations Reference Guide

(Topic number: 6655)

The *IMPAX Migrations Reference Guide* contains information to assist in the migration from WEB1000, IMPAX 4.5, IMPAX 5.2, or IMPAX 5.3 to IMPAX 6.5.3. Among the information available is the following:

- IMPAX 5.2 preferences migrated to IMPAX 6.5.3
- IMPAX 5.2 and WEB1000 to IMPAX 6.5.3 feature comparison
- IMPAX 5.2 and IMPAX 6.5.3 permissions and privilege comparison
- IMPAX 5.2 database tables rendered obsolete in IMPAX 6.5.3
- Default operations assigned to each default role

This guide is installed with both Server and Client documentation, in the same folder as the installation, upgrade, and configuration guides. Its file name is `impax-migration-reference.pdf`.

IMPAX Quick References

(Topic number: 54853)

Quick References are intended for clinical users. These abbreviated publications provide instructions for commonly performed tasks and frequently required references. For ease of access, Quick References can be printed (double-sided if possible) and posted at Client workstations.



Note:

To view the IMPAX Quick References on a computer, Adobe Reader must be installed.

Opening a Quick Reference from the documentation DVD

(Topic number: 57817)

All IMPAX Quick References can be viewed directly from the IMPAX documentation DVD.

To open a Quick Reference from the documentation DVD

1. Insert the IMPAX documentation DVD.
2. Navigate to **/docs/{server | client}/quick-references**.
3. Double-click the file name of the Quick Reference to open.

Opening a Quick Reference from where the documentation is installed

(Topic number: 57823)

Once the IMPAX documentation is installed, you can access the Quick References from a connected computer.

To open a Quick Reference from where the documentation is installed

1. Open a browser window.
2. Navigate to `https://application_server_name/documents/`
where *application_server_name* is the name of the server where the IMPAX documentation is installed.
3. Under Quick References, click the title of the Quick Reference to view.

IMPAX Client Quick References

(Topic number: 54856)

| Title | File name | Describes common IMPAX procedures and references for |
|---|-----------------------------|---|
| IMPAX 6.5.3 Quick Reference: Breast Imaging | breast_imaging.pdf | Radiologists who specialize in breast imaging. |
| IMPAX 6.5.3 Quick Reference: Clinicians | clinicians.pdf | Clinicians and surgeons. |
| IMPAX 6.5.3 Quick Reference: CT-MR | ct-mr.pdf | CT/MR navigation tasks. |
| IMPAX 6.5.3 Quick Reference: Emergency (ER) | emergency.pdf | Emergency room clinical staff. |
| IMPAX 6.5.3 Quick Reference: ICU | icu.pdf | ICU clinical staff. |
| IMPAX 6.5.3 Quick Reference: IMPAX Reporting for Administrators | reporting_administrator.pdf | PACS Administrators at sites using IMPAX Reporting. |
| IMPAX 6.5.3 Quick Reference: IMPAX Reporting for Radiologists | reporting_radiologist.pdf | Radiologists at sites using IMPAX Reporting. |
| IMPAX 6.5.3 Quick Reference: Orthopaedics | orthopaedics.pdf | Orthopaedic surgeons. |
| IMPAX 6.5.3 Quick Reference: Radiologists | radiologists.pdf | Radiologists. |
| IMPAX 6.5.3 Quick Reference: ROUNDS | ronds.pdf | Conducting rounds or conferences. |
| IMPAX 6.5.3 Quick Reference: Search | search.pdf | Searching for studies and patients by various criteria. |
| IMPAX 6.5.3 Quick Reference: Spine Annotation | spine_annotation.pdf | Applying spine annotation labels to CT or MR images to indicate which section of the spine an image intersects. |
| IMPAX 6.5.3 Quick Reference: Technologists | technologists.pdf | Technologists and radiographers. |

IMPAX Server Quick References

(Topic number: 54859)

| Title | File name | Describes common IMPAX procedures and references for |
|---|---|---|
| IMPAX 6.5.3 Quick Reference: Administration Tools | admin_tools.pdf | Configuring IMPAX Server using the Administration Tools. |
| IMPAX 6.5.3 Quick Reference: Configuring the Cached Workstation VPN at Home | impax-cached-workstation-home-vpn-quick-ref.pdf | Configuring the IMPAX Cached Workstation Virtual Private Network (VPN) at home. |

Prerequisite data and material

(Topic number: 115262)

Before proceeding with the installation or upgrade to IMPAX 6.5.3, the following data and material must be collected.

- Ensure that all appropriate guides, release notes, and service bulletins are available.
- Acquire CD/DVD, ISO image, or EXE file for the following, if appropriate:
 - Current version of the operating system
 - Previous and current versions of IMPAX
 - Previous and current versions of the database software
 - Any third-party software required for the upgrade
 - All service updates mentioned for the previous items
- Acquire properly issued certificates.
- Acquire valid IMPAX license keys.
- Ensure that all information needed during the installation or upgrade and configuration is available; for example, the Application Server's fully qualified domain name.

Prerequisite software installations

(Topic number: 59235)



Note:

For each package, ensure that the most current Service Update (SU) packages available at the time of upgrade are also installed.

Before proceeding with the migration to IMPAX 6.5.3, migrate or install the following software.

- If currently running PACS Broker 1.5.3, 1.5.4 or 1.5.5, you must migrate to Connectivity Manager 2.2.1 or later under the following circumstances:
 - Multi-site installations (for report queries from multiple sources)
 - VPN sites
 - EPR integrations with HL7 backend messaging
 - IMPAX RIS integrations
 - IMPAX RIS CD burning
 - Cardiology integrations
- If you require the following new IMPAX and Connectivity Manager functionality, you must also migrate to Connectivity Manager 2.2.1 or later:
 - Report viewing in the IMPAX Client Text area
 - IHE workflows
 - MPPS communication from modalities
 - Audit messaging
 - Language support for Latin 4 character sets

This guide covers how to manage Broker data with a traveling server, but full instructions on migrating your Broker data to Connectivity Manager are provided in the appropriate version of the *Connectivity Manager Migration Guide*.



Note:

To continue to use PACS Broker 1.5.3, 1.5.4, or 1.5.5—and if the preceding circumstances do not apply—install the PACS Broker DICOM Interface SU2.

You can also install or upgrade the versions of the following products before upgrading to IMPAX 6.5.3. These components are optional and may not be used by all sites.

- If intending to use the IMPAX Reporting integration with the IMPAX Client, IMPAX RIS must be upgraded to version 5.7 or later. For upgrade instructions, refer to the *IMPAX RIS InstallShield Technical Manual*.
- TalkStation must be upgraded to TalkStation 4.0 SU4 or later. For instructions on upgrading TalkStation, refer to the appropriate TalkStation Upgrade Guides.
- Audit Manager. For installation instructions, refer to the *Audit Manager 1.2 Installation, Upgrade, and Configuration Guide*.

IMPAX hardware and software requirements

(Topic number: 61303)

For optimal performance, Agfa recommends particular hardware and software for each component of the cluster.

IMPAX Application Server hardware and software requirements

(Topic number: 6682)

Application Servers have specific hardware and software requirements. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX Application Server: Hardware requirements

(Topic number: 6691)

| Component | Requirements |
|------------------|--|
| System | Preferred: HP ML370 G6/G7, DL380 G6/G7 Supported: Dell 1900, 2900, 2950, 6900*, 6950*, PER610/710, PET610/710 |
| CPU | Minimum: 1 x dual core |
| RAM | 8 GB minimum |
| Hard drive space | 2 x 73 GB (Mirrored) |
| RAID | Embedded |
| Tape backup | DAT 72/160 tape drives (if required for backup). For Oracle and larger SQL installs, a network backup is preferred. |
| Modem | N/A |
| DVD-ROM | Yes |

| Component | Requirements |
|--------------------|---------------------------|
| Network interfaces | 100/1000 Mbps |
| Video | KVM or Integrated video |
| Power supplied | Redundant |
| Peripherals | KVM or mouse and keyboard |

* The use of four-CPU socket servers for IMPAX is supported but not recommended.

IMPAX Application Server: Software requirements

(Topic number: 6621)

The following tables list the required software for Application Servers using Windows Server 2008® R2 (64 bit only) platforms. Unless otherwise indicated, Agfa does not provide the software as part of the Application Server installation package.



Note:

The Office Converter Pack files are installed as part of the Application Server installation. They are installed only when the RIS Services are installed.

| Component | Requirements |
|-------------------------|---|
| Operating system | Windows Server 2008® R2 Service Pack 1, (64-bit), US - English |
| Remote access | Symantec pcAnywhere™ version 12.5 SP3 with HF TECH179960 |
| Other explicit software | <ul style="list-style-type: none"> • IIS 7.5 for Windows 2008 R2 • Microsoft Internet Explorer 8.0 • AD LDS • .NET 3.5 SP1 • Latest version of Adobe® Reader® • Norton Antivirus 6.1 or higher, Trend Micro, McAfee Antivirus 4.5 or higher |

IMPAX AS300 Server hardware and software requirements

(Topic number: 6674)

IMPAX AS300 Servers (including single-server configurations and dedicated Curator and CD Export servers) have specific hardware and software requirements. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX AS300 Server: Hardware requirements

(Topic number: 6690)

The following hardware configuration is recommended for IMPAX AS300 servers (including single-server configurations).

| Component | Requirements |
|--------------------|--|
| Example systems | Preferred: HP ML370, DL380 (may be deployed with VMware ESXi 4.1.0) Supported: Dell 1900, 2900, 2950, 6900*, 6950* |
| Number of CPUs | Minimum one dual-core, x64 capable CPU |
| RAM | 8 GB minimum (Oracle 11g requires more RAM than previous versions of Oracle) 16 GB minimum for Oracle Data Guard servers |
| Hard drive | Minimum three drives Minimum drive size 73 GB; NAS/SAN connections also supported See “Recommended disk partitions” (topic number 7056) in the <i>IMPAX 6.5.3 AS300 Installation and Configuration Guide</i> . |
| RAID | Embedded RAID (for onboard storage) |
| Tape backup | DAT 72/160 tape drives, if required for SQL database backup. Oracle direct tape backup is not supported. For Oracle and larger SQL installs, network backup is preferred. The third-party backup tool, HP Data Protector, can be used and is free when ordering an HP tape device. |
| Modem | Not required |
| DVD-ROM | Yes |
| Floppy | No |
| Network interfaces | 100/1000 Mbps |
| Video | Integrated video |
| Power supplies | Redundant |
| Peripherals | Mouse, keyboard, monitor |

* The use of four-CPU servers for IMPAX is supported but not recommended.

Additional AS300 hardware requirements: Storage requirements

(Topic number: 6733)

Additional hardware can be used to meet archive requirements.

IMPAX AS300 Server: Non-SCSI CD/DVD burners and controller cards

(Topic number: 58044)

OEM-supplied CD/DVD writer

IMPAX AS300 Server: HSM storage requirements

(Topic number: 6686)

Direct attached libraries are not supported in IMPAX 6.5.3.

The following HSM storage devices are preferred:

- EMC
- HP
- QStar



Note:

To use QStar HSM with IMPAX, open port 160 for UDP messages.

IMPAX AS300 Server: External storage requirements

(Topic number: 6616)

For the most current and complete listing of supported storage products, refer to the [IIBU Solution Platform Compatibility Matrix](#) (Livelink ID 19535804). If you do not have access to this document, contact Agfa Professional Services.

IMPAX AS300 Server: External software requirements

(Topic number: 6695)

The following software is required for most IMPAX AS300 servers. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX AS300 Server installation package.

| Component | Requirements |
|-------------------|---|
| Operating system | Windows Server 2008 R2 SP1 (64-bit) |
| Database software | One of the following: <ul style="list-style-type: none">• Enterprise Edition, Standard Edition, or Standard Edition One of Oracle 11.2.0.2 (April 2011 CPU), provided on Oracle for Windows 64-bit DVD. For Oracle Data Guard, Enterprise Edition is required. A valid support contract is required. or |

| Component | Requirements |
|---|--|
| | <ul style="list-style-type: none"> Upgrades only: Microsoft SQL Server 2008 R2 SP1 (64-bit), Standard Edition. |
| Database software (for separate Network Gateway, Archive Server) | Oracle Instant Client 11.2.0.1.0 including Basic, ODBC, and SQLPlus ODAC 11.2.0.2.1 for .NET 2.0 |
| Browser | Internet Explorer 8.0 |
| Java | Version 1.6 u31 |
| Documentation | Latest version of Adobe® Reader® |
| Remote access (optional) | Symantec pcAnywhere version 12.5 SP3 with TECH179960 hotfix |
| Antivirus | Norton Antivirus 6.1 or higher, Trend Micro, McAfee Antivirus 4.5 or higher <i>Refer to Agfa's Policy on Use of Anti-Virus Software</i> |
| Other software | .NET Framework 3.5 SP1 |

IMPAX Client hardware and software requirements

(Topic number: 6679)

IMPAX Client workstations have specific hardware and software requirements.

IMPAX Client: Hardware requirements

(Topic number: 7793)

The following hardware configuration are intended as a guide for IMPAX 6.5.3 Clients used primarily for viewing large volume image sets (such as 64 slice CT) and using third-party applications such as Voxar 3D, TalkStation, Orthopaedic planning tools, and so on. These Clients are typically used inside a hospital environment, such as a radiology reading area by radiologists. While IMPAX Client should work on an equivalent platform, optimal results can be guaranteed only on the recommended platform.

To use the CT-MR navigation tools, we strongly recommend that, due to the high volume of data being manipulated, Client systems be equipped with a high-end video subsystem that is PCIe X16 based.



CAUTION!

For official diagnostic interpretation, we recommend setting the display to 32-bit color or more.

| Component | Requirements | |
|--|---|--|
| System | The Agfa preferred supplier is HP. HP xw4400, xw4600, xw6400, xw6600, z400, or z600 Dell Precision™ 490 or 690, T5400, T7400, or T7500 | |
| CPU | 2 x 2.0GHz or higher 1 x Dual/Quad Core 2.8GHz or higher 1 x Intel® Pentium® M 1.5GHz (Tablet PC – Non-diagnostic) | |
| RAM | Windows XP: 1 GB minimum Windows Vista and Windows 7: 4 GB minimum 8 GB recommended for all new systems for optimal performance and viewing of large volume image sets 4 GB recommended for IMPAX Clinical Applications such as IMPAX Virtual Colonoscopy, IMPAX PET-CT Viewing, and IMPAX Reporting (embedded speech recognition) | |
| Hard drive space | 80 GB minimum | |
| Modem | Not applicable | |
| DVD-ROM drive | Yes | |
| Tape backup | Not applicable | |
| Floppy drive | Not applicable | |
| Network interfaces | System comes with an integrated 100/1000 Mbps Ethernet adapter | |
| Power supply | Default | |
| Peripherals | Scroll mouse and keyboard For North America, the Logitech MX518 is used with the MA3000. | |
| Other | Microsoft supported DVD RW/CDRW | |
| Video | | |
| Diagnostic review workstations and high-end diagnostic review workstations | Windows 7 (WDDM)*: MXRT1150, 2150 MXRT5200 (covers 98% of the diagnostic requirements) MXRT5400 MXRT7200 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX) MXRT7300 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX. Supported from WDDM v1.1 May/June 2010) | Windows XP and Vista (for upgrades): BarcoMed PCIe for Coronis BarcoMed PCIe for Nio BarcoMed PCIe 5MP2FH (only with monitor MF GD-5621HD) MXRT 2100/5100/7100 (not sold anymore but still supported) MXRT5200 (covers 98% of the diagnostic requirements) |

| Component | Requirements | |
|---|---|---|
| | | MXRT200 and 7300 (high-end board for IMPAX Clinical Applications such as Oasis for IMPAX) |
| RIS/Administrator stations and Clinical review stations | Windows 7 (WDDM): | Windows XP and Vista: |
| | NVIDIA FX 1700, FX 1800, FX 4800 | NVIDIA FX 1700, FX 1800, FX 4800 |
| | ATI 3700, 3750, V3800 (third monitor board) | ATI 3700, 3750, V3800 (third monitor board) |
| | MXRT 1150/2150 (third monitor board) | MXRT 1150/2150 (third monitor board) |

*Windows 7 and WDDM drivers do not support the BarcoMed and older MXRT (2100, 5100, and 7100) boards.

IMPAX Client: External software requirements

(Topic number: 6694)

The following software is required for all new stations. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX Client installation package.



Note:

Ensure that the WEB, Compressor, and Curator packages are not installed on the Client machine.

| Component | Requirements |
|------------------|--|
| Operating system | <p>Windows 7 Professional 64-bit (single language support) SP1 or Windows 7 Ultimate 64-bit (multi-language support) SP1 for Diagnostic review stations</p> <p>Microsoft Windows XP Professional SP3 may be used for non-diagnostic Client upgrades but is no longer available for shipment</p> <p>Note that other versions of Windows 7 SP1 can be used for non-diagnostic review stations.</p> |
| Other software | <p>Microsoft Internet Explorer 8.0</p> <p>.NET 3.5 SP1</p> <p>Latest version of Adobe® Reader®</p> <p>Antivirus software such as Norton Antivirus 6.1 or higher, Trend Micro, or McAfee Antivirus 4.5 or higher</p> <p>Note that Oracle 11 Client is required for IMPAX Reporting and IMPAX for Cardiology</p> |

The IMPAX Client will run on 64-bit operating systems in 32-bit compatibility mode. The IMPAX Client is not a 64-bit application and therefore does not take advantage of 64-bit processing or memory addressing.

Performing initial installations

2

Only some IMPAX installations can be performed during the preparing to upgrade period. In many cases, installation details are provided in one of the IMPAX 6.5.3 guides listed in *IMPAX installation, configuration, and upgrade guides* (refer to page 24).

1. Evaluating system requirements

(Topic number: 6701)

We recommend specific hardware and software for the various IMPAX 6.5.3 cluster components. Use these requirements to assess which existing servers to keep and upgrade, and which to replace with new servers. Also consider site performance—measure the time to acquire the first image. If current performance is inadequate or borderline, this may be another reason to replace some of the equipment.

Full system requirements are listed in *IMPAX hardware and software requirements* (refer to page 32).

2. Obtaining Server license keys

(Topic number: 7637)

IMPAX uses software license keys that are unique to the station on which the software is installed. One license key is required for the Network Gateway and a separate license key must be obtained for the Archive Server (even if using PACS Store and Remember archiving).

Obtaining Server licenses for Windows stations

(Topic number: 10699)

To obtain new license keys, if this is required, email licensekey@agfa.com. To generate the license keys, Agfa must know the Ethernet MAC (Media Access Control) address of the server.

To obtain Server licenses for Windows stations

1. For each Windows server, open a command prompt and type **ipconfig /all**.

The MAC address of all Ethernet cards installed on the station are listed. You can use any of these to generate the license from.

2. Copy one of the returned MAC addresses to a secure place.

Ensure that you copy down the address exactly as it appears, including leading zeroes.

The MAC addresses contain only the alphanumeric characters 0-9 and A-F.

3. To obtain a license key for the server, send the MAC address information to licensekey@agfa.com, along with the type of component being installed on that server.

3. Installing IMPAX 6.5.3 on new servers

(Topic number: 6667)

If replacing the existing IMPAX servers with new servers or adding additional servers to the cluster as part of the upgrade, and for WEB1000-only sites that must use new servers, install the appropriate external and IMPAX 6.5.3 software on the new single-host, Database Server, Archive Server, or Network Gateway during the preparing to upgrade period.

Do not install dedicated Curator stations at this time. One Curator station is reserved for use as a training server during the preparing to upgrade period. It will be converted to a dedicated Curator during the upgrade period, at which point any other Curator stations can be installed as well.

For details on how to install and initially configure a single-host, Database Server, Archive Server, or Network Gateway, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.



Note:

Since all IMPAX 6.5.3 AS300 servers must be installed under Windows Server 2008 R2 SP1, all AS300 upgrades to IMPAX 6.5.3 require forklift upgrades to new or restaged hardware. For details on installing Windows Server 2008 R2 SP1, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

If performing a forklift upgrade of an Oracle Database Server, ensure that you install the same Oracle edition as the existing production system or else the database migration will fail. For example, if the database on the production system is Oracle Standard Edition, install Oracle Standard Edition when staging the new system. Or, if the database on the production system is Oracle Enterprise Edition, install Oracle Enterprise Edition when staging the new system.

In the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*, Oracle for Windows is the recommended database for new AS300 (Windows) installations. However, when installing a new IMPAX AS300 Database Server as part of the upgrade, if SQL Server was previously used, then you must install SQL Server 2008 R2 (refer to page 42) as part of the IMPAX 6.5.3 upgrade, and select the SQL Server Extension package when installing the Database Server (refer to page 45).

Migrating an IMPAX database from SQL Server to Oracle for Windows is not documented. To do this, contact Agfa Professional Services.

4. Installing SQL Server 2008 R2

(Topic number: 141825)



Note:

SQL Server 2008 R2 is not distributed with IMPAX but is available from the Agfa Parts Center. Before beginning the installation, make note of the sa password to use, as you will be prompted to supply it.

We recommend that you install the SQL Server database on a drive other than C:; for example, the E: drive. For more details, see “Recommended disk partitions” (topic number 7056) in the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

Oracle for Windows is the recommended database for new AS300 installations. However, if SQL Server 2005 or 2008 was previously used, you must install a new IMPAX Database Server with SQL Server 2008 R2 SP1 as part of the upgrade to IMPAX 6.5.3, and select the SQL Server Extension package when installing the Database Server (refer to page 45).

To install SQL Server 2008 R2

1. Log into Windows as an administrator-level user.

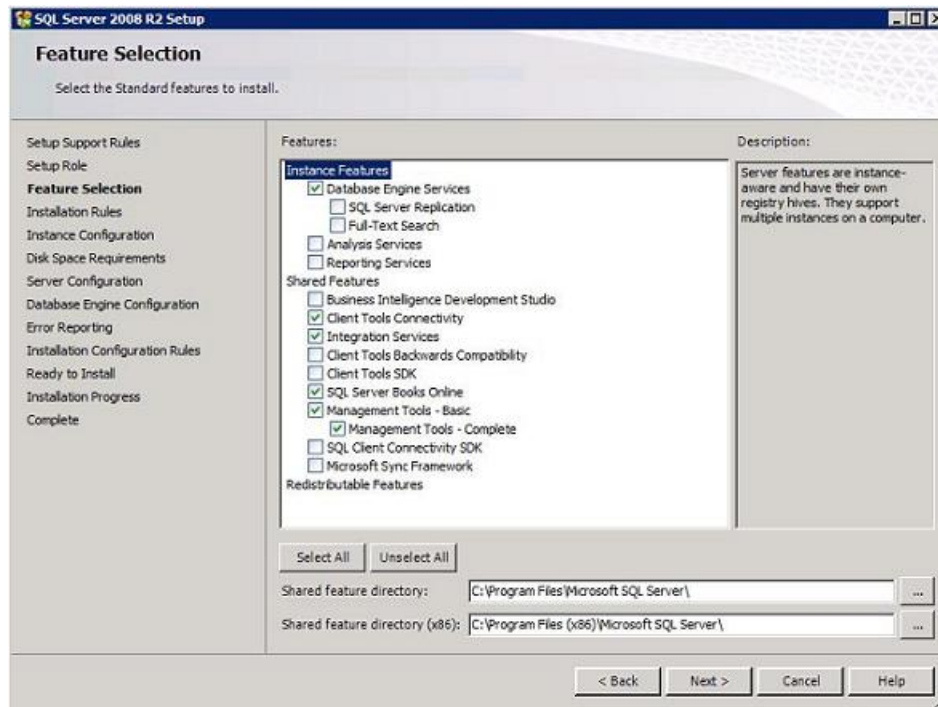


CAUTION!

If the .NET Framework is not installed and enabled, the SQL Server 2008 RTM installation may fail on Windows Server 2008. This problem can occur because installation of the .NET Framework 3.5 is a prerequisite for the SQL Server 2008 installation, but on Windows Server 2008, .NET Framework 3.5 is not installed by default. It is included as a Windows component.

2. Launch the installer. If a To enable the .NET Framework Core role, click OK message appears, click **OK**.
3. Select **Installation** from the menu on the left of the SQL Server Installation Center.
4. To perform a new installation of SQL Server 2008, select the first option, **New installation or add features to an existing installation**.
5. On the Setup Support Rules screen, ensure that no installation problems have been identified. Click **OK**.

6. On the Product Key screen, enter the product key. Click **Next**.
7. On the License Terms screen, read the license agreement and select the **I accept the license terms** checkbox. Click **Next**.
8. On the Setup Support Files screen, click **Install**.
9. On the Setup Support Rules screen, ensure that no significant errors exist and investigate any warnings. Click **Next**.
10. On the Setup Role screen, select **SQL Server Feature Installation**. Click **Next**.
11. On the Feature Selection screen, select the required components (as in the image that follows) and click **Next**.



12. On the Installation Rules screen, ensure that no failures have occurred. Click **Next**.
13. On the Instance Configuration screen, select **Default instance**. Click **Next**.
14. On the Disk Space Requirements screen, ensure that sufficient disk space exists for the features you have selected. Click **Next**.
15. On the Server Configuration screen, on the Service Accounts tab, click **Use the same account for all SQL Server services**.
16. In the dialog that follows, for the Account Name, select **NT AUTHORITY\SYSTEM** and leave the Password blank. Click **OK** and then click **Next**.
17. On the Database Engine Configuration screen, on the Account Provisioning tab, select **Mixed Mode (SQL Server authentication and Windows authentication)** and type the sa (system administrator) password.
18. To add the administrative user, click **Add Current User**. Click **Next**.

19. On the next two screens, Error Reporting and Installation Configuration Rules, accept the default values by clicking **Next**.
20. On the Ready to Install screen, click **Install**.
21. On the Installation Progress screen, after the installation completes, click **Next**.
22. On the Complete screen, click **Close**.
23. Close the SQL Server Installation Center.
24. Restart the computer and log into Windows as an administrator-level user.

Stopping SQL Server services

(Topic number: 109422)

Before proceeding with the next task, stop the Windows SQL Server services, if they have been started.

To stop SQL Server services

1. Open the Windows Administrative Tools.
2. Select **Services**.
3. Select each of the following services in turn and click **Stop Service**, if needed:
 - a. **SQL Server Browser**
 - b. **SQL Server Integration Services 10.0**
4. Close the Services window.

You can now install SQL Server 2008 R2 SP1.

Upgrading SQL Server 2008 R2 to SQL Server 2008 R2 SP1

(Topic number: 141822)

The SQL Server 2008 R2 SP1 executable file is **SQLServer2008R2SP1-KB2528583-x64-ENU.exe** (64-bit). You must acquire this file from Microsoft; for example, you can download it from the Microsoft website at <http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=26727>.

To upgrade SQL Server 2008 R2 to SQL Server 2008 R2 SP1

1. Download **SQLServer2008R2SP1-KB2528583-x64-ENU.exe**.
2. Run the SP1 installer executable and follow the instructions.

Troubleshooting: Server name registered in SQL Server is incorrect

(Topic number: 7625)

Issue

If the server name registered in SQL Server is not the same as the server name registered in Windows, you must update the server name in SQL Server.

Details

This discrepancy may happen if you use a ghost image when installing the third-party applications.

Solution

To check the server name registered in Windows

1. Right-click **My Computer** and select **Properties**.
2. Switch to the **Computer Name** tab.

The server name is listed as the full server name.

To check the server name registered in SQL Server

1. In a SQL Server query window, type **select @@servername**

To update the server name registered in SQL Server

1. In the SQL Server query window, type:
sp_dropserver old_server_name
go
sp_addserver server_name_as_in_Windows, local
go

Installing the IMPAX 6.5.3 AS300 packages on a new SQL Database Server

(Topic number: 125936)

To install IMPAX AS300 Server, you must be logged into Windows as an administrator-level user.

Use the IMPAX installer to install the necessary AS300 packages on the system. These packages are described in “AS300 installer packages reference” (topic number 7682) in the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

To install the IMPAX 6.5.3 AS300 packages on a new SQL Database Server

1. Insert the IMPAX AS300 DVD or access the ISO file.
2. Double-click **as300-installer.exe**.

3. Type your name (minimum three characters).

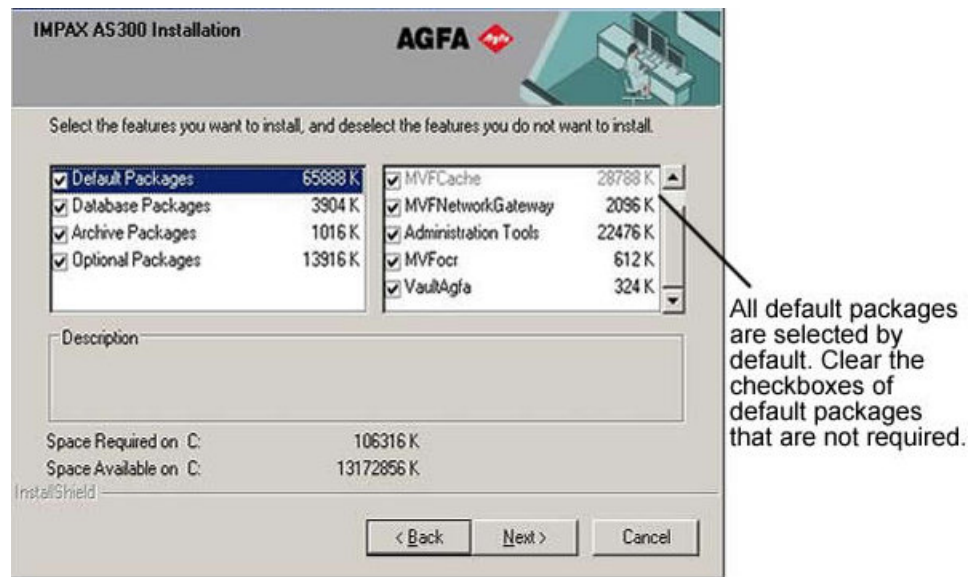
This information is recorded in the installer log file.

4. On the Welcome screen, click **Next**.

5. On the Select features screen, all Default Packages are selected. Clear the checkboxes of any packages that should not be installed.

For a dedicated Database Server, normally clear the **MVFNetworkGateway** and **MVFOcr** checkboxes.

For a single-host server, normally all Default Packages are required except, potentially, **MVFOcr**.



6. Select the **Database Packages** label.
7. Clear the **Oracle Server Extension** checkbox and select the **SQL Server Extension** checkbox.
8. For a dedicated Database Server (no archive), or if using PACS Store and Remember archiving only, clear the **Archive Packages** checkbox.
9. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.
 - Select the **MVFCurator** and **MVFclexport** checkboxes only if intending to install the Curator and CD Export server components on the Database Server rather than on a dedicated Curator server.
 - Select the **MVFPap** package only if the server is being used for archiving.
 - Clear the **MVFchangeaccepter** checkbox.
 - Do **not** select the MVFScavenger or the MVForadg checkbox.
10. Click **Next**.
11. If a Network Gateway package was installed, browse to the location of the MVF license file and click **OK**.

If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

12. If an Archive package was installed, browse to the location of the archive license file and click **OK**.

If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

13. At the Confirm: Your existing database is compatible with this version prompt, click **Yes**.
14. On the Summary screen, to continue the installation, click **Next**.
15. After all the packages have been installed, click **Yes, I want to restart my computer now**.

If you are not prompted to restart the computer, manually restart it.

After the server restarts, log into Windows as an administrator-level user.

5. Installing hardware and software on a new Application Server

(Topic number: 10769)

To prepare a server for an IMPAX Business Services installation, you must install the appropriate hardware and external software on it. For details, refer to the *IMPAX 6.5.3 Application Server Installation, Upgrade, and Configuration Guide*.

External software: Order of installation tasks

(Topic number: 11238)

You must install and configure the software on the Application Server in the order it is listed.



Important!

When installing the Application Server on Windows Server 2008, ensure that each Application Server has an unique Machine Security Identifier (SID). Machines using the same SID are not supported.

For more information on installing the required external software, refer to the documentation provided with the software or consult the vendor's website.



Note:

If connecting to a SQL Server Database Server, you do not have to install the Oracle Client.

Windows Server 2008

| Order | Installation or configuration task |
|-------|--|
| 1 | Installing Windows Server 2008 |
| 2 | Setting the primary DNS suffix |
| 3 | Configuring Windows Server 2008 |
| 5 | Partitioning disks on the Application Server on Windows Server 2008 R2 |
| 6 | Adding roles and role services in Windows |
| 7 | Configuring IIS logging |
| 8 | Installing AD LDS |
| 9 | Installing and configuring pcAnywhere 12.5 |
| 11 | Installing and configuring antivirus software |
| 12 | Installing Adobe Reader |

6. Installing a training server cluster

(Topic number: 9904)

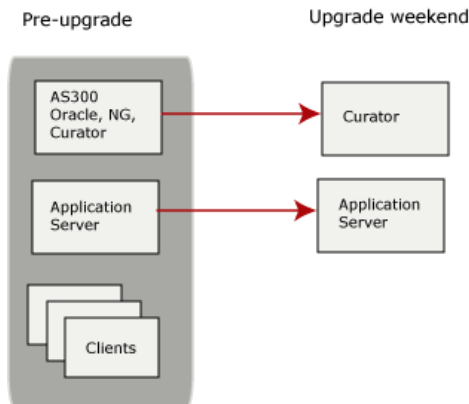
A training server cluster is set up with a new, temporary IMPAX 6.5.3 AS300 database. It is used during the preparing to upgrade period for:

- Training users on IMPAX 6.5.3 features.
- Migrating user data from IMPAX 4.5, 5.2, or 5.3 or from WEB1000 into the IMPAX 6.5.3 AD LDS database (the database used on the Application Server), and configuring those users.
- Setting up worklists in IMPAX 6.5.3, for later migration into the production database.

We recommend the following configuration for the training server cluster:

1. Initially setting up what will ultimately be a new Curator station as an IMPAX AS300 server containing an Oracle Database Server, Network Gateway, and Curator components, by following the instructions summarized in *Setting up an AS300 single-host server* (refer to page 49). (Even if staying with SQL Server on the production Database Server, we recommend setting up the training server under Oracle.)
2. Installing the IMPAX Documentation and IMPAX Business Services software on the Application Server computer, as described in *Installing the IMPAX documentation* (refer to page 50), *Installing the IMPAX Business Services* (refer to page 51), and following topics.

3. Setting up one or more IMPAX Client stations, connected to this Application Server, to use for training and configuration. For instructions, refer to the *IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide*.



Other configurations are also possible. The key is installing the Application Server software on the station designated for that purpose, but using a *temporary* IMPAX 6.5.3 AS300 Database Server. Regardless of the exact configuration, you perform all user data export and migration on the Application Server computer.



CAUTION!

If planning to replace an existing 5.2 or 5.3 server with a new IMPAX 6.5.3 AS300 server, do not use that actual server as part of the training server system. Data must be migrated from the training server to the 6.5.3 production server, so each server must be separately installed.

During the upgrade weekend, worklist data is migrated from the training server system to the production IMPAX 6.5.3 server, and the training server components are reconfigured as a dedicated Application Server and Curator (if used). These procedures are documented in the *AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

Setting up an AS300 single-host server

(Topic number: 7104)

During the preparing to upgrade period, set up the future Curator station as a single-host AS300 Oracle station, for use within the training server cluster. Details for these installation procedures are available in the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

In a single-host configuration, Windows-based Database, Archive, and Network Gateway components are all installed on one “box” or station. The table that follows presents the single-host installation steps to follow. Perform these tasks in the order listed.

Installing external hardware and software

| ☑ | Action |
|---|---|
| | Install Windows Server 2008 R2 software followed by Windows Server 2008 R2 Service Pack 1 |
| | Activate Windows |
| | Configure the Windows Control Panel to display in Classic mode |
| | To avoid memory allocation problems, change the page file setting |
| | Change the Windows Event viewer to overwrite events as necessary |
| | Create a temp directory |
| | Configure Internet Explorer to support security certificate validation |
| | Partition disks appropriately for database, volumes, logs, and cache |
| | Install Oracle Server for Windows |
| | Using Control Panel, enable Automatic Updates for critical Windows updates |
| | Launch Internet Explorer and enable active content for the IMPAX Knowledge Bases |
| | If an external modem is supplied, install it |
| | Install antivirus software |
| | Install and configure pcAnywhere 12.5 |
| | Install the latest version of Adobe Reader |

Installing IMPAX software

| ☑ | Action |
|---|--|
| | Obtain license keys (refer to page 40) by emailing Agfa the server MAC address |
| | Install the appropriate IMPAX AS300 packages |
| | Generate the portable password file |
| | Enable Data Execution Prevention (DEP) for all programs and services |
| | Synchronize the server clock with an appropriate time server |



Installing the IMPAX documentation

(Topic number: 15523)

Before installing the IMPAX 6.5.3 documentation, ensure that you have uninstalled any earlier IMPAX documentation.

The IMPAX 6.5.3 documentation is installed on the Application Server.

To install the IMPAX documentation

1. Insert the IMPAX Documentation DVD or access the ISO file.
2. Double-click **IMPAXDocumentationSetup.exe**.
A Preparing to install message appears.
3. On the Welcome screen, click **Next**.
4. On the Setup Type screen, select the appropriate option and click **Next**.
 - To install all documentation in all available languages, select **All Documentation**.
 - To install all English-language documentation, select **All English Documentation**. This is the default.
 - To select which documentation to install in which languages, select **Select Documentation to Install**.
5. If you selected Select Documentation to Install, on the Choose Features screen, you can select particular Knowledge Bases or languages to install.
 - To install the IMPAX Client Knowledge Base in two or more languages, click  beside the name of the language to install and select **This feature will be installed on the local hard drive**. (Note that English must be installed.)
 - To **not** install the IMPAX Server, IMPAX Application Server, or IMPAX Client documentation, click  beside the appropriate label and select **This feature will not be available**.
6. On the Ready to Install the Program screen, click **Install**.
Installation progress messages are displayed.
7. On the InstallShield Wizard Completed screen, click **Finish**.

The selected IMPAX documentation is now installed. Shortcuts appear in the Start menu and on the desktop.

Installing the IMPAX Business Services

(Topic number: 9873)

The IMPAX Business Services are installed on the Application Server.

To install the IMPAX Business Services

1. Insert the IMPAX Business Services CD.
2. Navigate to the appserver folder, which contains the Business Services software.
3. Run **AGFA IMPAX Business Services Setup.exe**.
4. Select the required software packages to install.

The following packages must be installed prior to the Business Services installation.

- Visual JSharp .NET 2.0

- .NET Framework 3.5 SP1 (installed with AD LDS)
- Visual C++ 2008 Redistributable

If any of these packages are listed in the InstallShield Wizard dialog, select them. If any of these packages do not appear in the list, those packages are already installed.

5. Click **Install**.
6. On the Welcome screen, click **Next**.
7. At the license agreement, select the **I accept the terms in the license agreement** checkbox. Click **Next**.
8. On the Setup Type screen, click **Custom**. Click **Next**.
9. If you have an IMPAX RIS to connect to, under RIS Web Services, select **This feature will be installed on local hard drive**. Click **Next**.

By default, this option is not selected. Details on completing the connection to the RIS are available in “RIS configurations” (topic number 11329) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

10. If you are installing the AD LDS instance on a separate machine, from the Local ADAM/AD LDS Instance list, select **This feature will not be available**.

By default, the Local AD LDS Instance is set to be installed in the same machine as the Application Server. Details on completing the separation of ADAM or AD LDS from the Application Server are available in Separating AD LDS from the Application Server.

11. Click **Next**.
12. On the Web Services Installation Folder screen, click **Change**.
13. Select **E:\wwwroot** as the location for the Web Services. Click **OK**.

Changing the location of the Web Services installs all of the web services to the same directory.



Note:

We recommend installing the Web Services to E:\wwwroot for enhanced security. The installation folder name must not contain any special characters.

14. Click **Next**.
15. Click **Install**.
The IMPAX Business Services are installed.
16. To continue with the configuration after the installation is complete and verified, select the **Launch Configuration Tool** checkbox.
17. Click **Finish**.

The IMPAX Business Services are installed. If selected, the Configuration Tool is displayed.

Verifying the Business Services installation

(Topic number: 7598)

You can verify the IMPAX Business Services installation by checking whether IIS works.

To verify the Business Services installation

1. Open a web browser and connect to **http://localhost**.
2. Verify that the IMPAX Documentation page is displayed.

or

If the IMPAX Documentation has not been installed on the server, that the Welcome to IMPAX 6.5.3 page is displayed.

Order of Application Server configuration

(Topic number: 11273)

You must configure the Application Server software in the order it is listed in this topic. Configuration details are available in the *IMPAX 6.5.3 Application Server Installation, Upgrade, and Configuration Guide*.

1. Importing the portable password file
2. Connecting to the IMPAX database
3. Extending the database schema
4. Armoring the Application Server
5. Adding an external LDAP server IP address to the Application Server's hosts file on Windows Server 2008 R2
6. Creating an SSL certificate request
7. Submitting a certificate request to a certificate authority
8. Importing an SSL certificate in the Security Wizard
9. Creating the administration account
10. Connecting to the AD LDS server
11. Configuring the image upload server
12. Connecting IMPAX Application Server to Audit Manager
13. Setting the logging levels
14. Synchronizing clocks on Windows-based IMPAX systems

Preparing a training plan

(Topic number: 55171)

Without the full participation of the entire radiology staff, the upgrade from IMPAX 5.2 or 5.3 to IMPAX 6.5.3 will not run smoothly. Clinicians need to be trained as well. We therefore recommend that a formal training plan be put in place.

Before preparing the plan, determine:

- Which users get one-on-one training and which can be trained in groups. Radiologists and key clinicians and technologists are normally trained one-on-one.
- How long each one-on-one and group session needs to be. Typical length is one to two hours.

Also plan to follow up with everyone after their initial training session, and plan to make Quick References available at all training stations.

Once these parameters are set, you can prepare the training schedule. Book one-on-one training with each individual by name. For groups, schedule several blocks of time for training and record attendance.

7. Installing the IMPAX 6.5.3 Migration Toolbox

(Topic number: 9911)

The tools in the IMPAX 6.5.3 Migration Toolbox automate some of the migration and upgrade tasks. The tools are run from a command prompt and do the following:

- Extract relevant information from the database.
- Transform the database schema and data.
- Coordinate the execution of tools across multiple machines.

Install the Migration Toolbox on the following servers, as applicable:

- The IMPAX 5.2 or 5.3 Database Server
- The WEB1000 Server
- The IMPAX 4.5 Database Server
- The IMPAX 6.5.3 Application Server component of the training server
- The traveling server
- The new IMPAX 6.5.3 Database Server (if performing a forklift upgrade)

You can optionally install the tools on any other computer with an MVF connection to the IMPAX or WEB1000 database.

Installing the Migration Toolbox on a Windows server

(Topic number: 11493)

To install the Migration Toolbox, you must be logged into Windows as an administrator-level user. The migration tools are on a dedicated Migration CD.

To install the Migration Toolbox on a Windows server

1. From the IMPAX Migration CD ISO, navigate to the **win32** directory and double-click **impax_65_migration-winpkg-6.5.3.xxx.exe** where xxx is the build number.
2. In the InstallShield Self-extracting EXE dialog, click **Yes**.
Setup progress dialogs appear.
3. On the Welcome screen, click **Next**.
4. On the Select Features screen, select the checkboxes of the features that you want to install, and clear the rest.
When migrating a SQL Server database, select all the features except the **Oracle on Windows Migration Tools**.
5. Click **Next**.
6. To continue, click **Install**.
7. If you selected the Worklist and Report Migration Tools on the Select Features screen, when prompted, press any key to continue.
8. On the Setup Complete screen, click **Finish**.

The Migration Tools are installed in the C:\mvf-mig6\bin directory, with the following exceptions for SQL Server databases:

| Executable | Installed in |
|---|-----------------------------|
| migrate-users | C:\mvf-mig6\UserMigration |
| Training/Traveling Server (MigrateTRServer.exe) | C:\mvf-mig6\MigrateTRServer |

8. Installing the PMTS package on the IMPAX production system

(Topic number: 124907)

The Parallel Migration Tool Set (PMTS) includes scripts to convert Direct Attached Archive (DAA) entries to PACS Store and Remember archiving. PMTS handles all de-referencing and re-referencing of the cached and archived locations in the database, and automatically updates all relevant tables. You can obtain these tools from Agfa. They are not shipped with IMPAX.

If the production system is not using DAA, you do not have to install these tools.

To install the PMTS package on the IMPAX production system

1. Copy the MVFdact.exe to the IMPAX system and run the file.
2. To exit the installer, click **Finish**.

The PMTS installation is complete.

9. Setting up a connection to the 4.5, 5.2, or 5.3 database

(Topic number: 6626)

To migrate IMPAX user data from the 4.5, 5.2, or 5.3 mvf database to the 6.5.3 AD LDS database on the Application Server, you must connect the Application Server to the IMPAX 4.5, 5.2, or 5.3 Database Server.

Setting up a connection to a previous-version AS300 database

(Topic number: 6627)

Use this procedure to connect the Application Server to an IMPAX 4.5, 5.2, or 5.3 AS300 Database Server.

To set up a connection to a previous-version AS300 database

1. To use the 32-bit version of the ODBC Data Sources tool, run **C:\Windows\SysWOW64\odbcad32.exe**.
Do not select **Data Sources (ODBC)** through the Windows Administrative Tools as this runs the 64-bit version of the tool.
2. Switch to the **System DSN** tab.
3. Click **Add**.
4. In the Create New Data Source dialog, select **SQL Server** from the list. Click **Finish**.
5. In the Name field, type the appropriate value:
For IMPAX 4.5 upgrades, use **mvf_45**.
For IMPAX 5.2 upgrades, use **mvf_52**.
For IMPAX 5.3 upgrades, use **mvf_53**.
The *mvf* name is already being used by the temporary IMPAX 6.5.3 AS300 server.
6. In the Description field, type **mvf** (lowercase).
7. In the Server field, type or select the name of the 4.5, 5.2, or 5.3 AS300 server. Click **Next**.
8. Set the authentication according to the authentication used at the site (**Windows NT** or **SQL Server**).

9. If necessary, select the **Connect to SQL Server** checkbox and supply a Login ID and Password.
10. If necessary, change the network library by clicking **Client Configuration**. Under Network libraries, select the protocol used to communicate with the SQL server at your site: either **TCP/IP** (the default) or **Named Pipes**. Click **OK**.
11. Click **Next**.
12. Change the default database to **mvf** (lowercase). Click **Next**.
13. Click **Finish**. Click **OK**.

You can now run Migration Tools user commands against this 4.5, 5.2, or 5.3 server.

10. Setting up a connection to the WEB1000 database

(Topic number: 6625)



Important!

This topic applies only to migrations from WEB1000 systems.

To migrate WEB1000 user data from the WEB1000 mvf database to the 6.5.3 AD LDS database on the Application Server, you must connect the Application Server to the WEB1000 Server.

To set up a connection to the WEB1000 database

1. To use the 32-bit version of the ODBC Data Sources tool, run **C:\Windows\SysWOW64\odbcad32.exe**.
Do not select **Data Sources (ODBC)** through the Windows Administrative Tools as this runs the 64-bit version of the tool.
2. Switch to the **System DSN** tab.
3. Click **Add**.
4. In the Create New Data Source dialog, select **SQL Server** from the list. Click **Finish**.
5. In the Name field, type **mvf_web**.
The *mvf* name is already being used by the temporary IMPAX 6.5.3 AS300 server.
6. In the Description field, type **mvf** (lowercase).
7. In the Server field, type or select the name of the WEB1000 Server. Click **Next**.
8. Set the authentication according to the authentication used at the site (**Windows NT** or **SQL Server**).
If using SQL Server, you may also have to select the **Connect to SQL Server** checkbox and supply a Login ID and Password.

9. If necessary, change the network library by clicking **Client Configuration**. Under Network libraries, select the protocol used to communicate with the SQL server at your site: either **TCP/IP** (the default) or **Named Pipes**. Click **OK**.
10. Click **Next**.
11. Change the default database to **mvf** (lowercase). Click **Next**.
12. Click **Finish**. Click **OK**.

You can now run Migration Tools user commands against this server.

11. Transmitting studies to the training server

(Topic number: 9940)

To use the temporary AS300 server station for training, set it up as a remote station in the IMPAX 4.5, 5.2, or 5.3 cluster, and transmit some studies to it.

For details on how to do this, refer to “Transmitting studies” (topic number 000468) in the Service Tools component of the *IMPAX 5.2 Server Knowledge Base* or *IMPAX 4.5 Knowledge Base*.

12. Installing the IMPAX Client software

(Topic number: 7774)

The following information explains how to install the IMPAX Client software, including setting up an Installation Server. It also explains how to automate the installation of the IMPAX Client software.

Installing the IMPAX Installation Server

(Topic number: 7773)

You can set up an IMPAX Client Installation Server by running the `IMPAXInstallationServerSetup.exe` on a Windows-based server.

Setting up the Installation Server makes it easier to install the Client software from a central website. You can also use it to install updates to the Client software when they become available throughout the site and to remote Clients.

You may choose to install the Installation Server program on an IMPAX Application Server (in which case you can continue with *Running the IMPAX Installation Server package* (refer to page 59)) or on a separate, dedicated Windows-based server.



Note:

If your site has a large number of IMPAX Clients, or if they are regularly updated, using an Application Server as an Installation Server may affect the performance of Clients connected to that Application Server. This is because the Clients all check for a new version every 30

minutes and, although staggered, performance issues have been reported when many Clients are downloading the new IMPAX Client software.

Therefore, we recommend:

- Using a third-party software distribution application (for example, Microsoft SMS or Altiris) to avoid saturation of the Application Server. Consult your regional Agfa representative for options.
- or
- Placing the Installation Server on a dedicated server.

If you choose to install the IMPAX Installation Server package on a dedicated server, use the Web Server Certificate Wizard to create a certificate request to submit to a trusted certificate authority, and install the certificate. You must install the SSL certificate on the dedicated server before installing the IMPAX Installation Server package.

The Installation Server Setup package contains:

- The installers (or links) for the IMPAX Client prerequisites:
 - .NET Framework 3.5 SP1
 - Visual C++ 9.0 SP1
 - DirectX
- The IMPAX Client Installer
- A web page with links to:
 - IMPAX Client system requirements
 - IMPAX Client installation instructions (available in all supported languages)
 - Links to the IMPAX Client Installer
 - Links to the individual prerequisites

Running the IMPAX Installation Server package

(Topic number: 7758)



CAUTION!

To avoid performance issues, do not install the IMPAX Installation Server on a standalone IMPAX workstation (a workstation running the AS300, Application Server, and Client software).

You can install an IMPAX Installation Server to use as a distribution tool for Client installations and updates.

To run the IMPAX Installation Server package

1. From the IMPAX Client CD or a network location, run **IMPAXInstallationServerSetup.exe**.
A *Preparing to install* message appears.
2. On the Welcome to the InstallShield Wizard for IMPAX Installation Server screen, click **Next**.
3. To install the application into C:\Inetpub\wwwroot\ClientInstaller, on the Destination Folder screen, click **Next**.

or

To install the application to another location, click **Change**. In the Change Current Destination Folder dialog, browse for the directory location to install into and click **OK**. On the Destination Folder screen, click **Next**.

4. On the Ready to Install the Program screen, click **Install**.

The first installer runs.

5. On the Installation Wizard Completed screen, click **Finish**.

Another installer starts. (It may start before the first one finishes.) The second one opens a command prompt that creates a manifest file.

6. On the second Installation Wizard Completed screen, click **Finish**.

In the folder where the application was installed, several subfolders appear, including:

- **redist**—Contains the .NET Framework installers
- **installer**—Contains the ImpaxClientSetup.exe, the IMPAX Client installation software

For the updater service, which allows all installed Clients to receive automatic updates, public and private key pairs are installed in C:\Program Files\Agfa\IMPAX Client. Refer to “Configuring automatic Client updates” (topic number 10054) in the *IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide*.

Running the Microsoft .NET Framework 3.5 SP1 installer package

(Topic number: 107096)



Important!

.NET Framework 3.5 SP1 must be installed prior to starting the Client installation. We recommend using Group Policies or SMMS to download and install .NET Framework 3.5 SP1. However, if these methods are not available, the .NET Framework 3.5 SP1 installer package is available.

The Microsoft .NET Framework 3.5 SP1 installer package is a modified version of the IMPAX Installation Server. It distributes the .NET upgrade to Client workstations throughout the site and to remote Clients.

A week prior to upgrading the IMPAX Client software, run the installer package on the Application Server or a dedicated Windows-based server. We recommend running the installer package during

the site's off-hours, as downloading and installing the Microsoft .NET framework can take over 30 minutes, depending on network speed.

To run the installer package on a dedicated server that does not already have the IMPAX Installation Server installed, when using https mode, you must use the Web Server Certificate Wizard to create a certificate request to submit to a trusted certificate authority, and install the certificate. You must then install the SSL certificate on the dedicated server before running the installer package.

If using http mode, you do not have to install the SSL certificate.

For more information, refer to “Installing an SSL certificate on a dedicated server” (topic number 7786) and “*Installing the IMPAX Installation Server* (refer to page 58)” (topic number 7773) in the *IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide*.



Note:

The PACS Client Updater service downloads and installs the .NET Framework 3.5 SP1. The services run as administrator, so you do not have to log in as the administrator user.

To run the Microsoft .NET Framework 3.5 SP1 installer package

1. From the IMPAX Client CD or a network location, run **IMPAXInstallationServer_DotNet35Updater.exe**.
2. On the Welcome to the InstallShield Wizard for Agfa IMPAX Installation Server - .NET 3.5 SP1 Updater screen, click **Next**.
3. To install the application into C:\inetpub\wwwroot\ClientInstaller, on the Destination Folder screen, click **Next**.

or

To install the application to another location, click **Change**. In the Change Current Destination Folder dialog, browse for the directory location to install into and click **OK**. On the Destination Folder screen, click **Next**.

4. On the Ready to Install the Program screen, click **Install**.
The installer runs.
5. On the Installation Wizard Completed screen, click **Finish**.

Enabling automated installation of the IMPAX Client software from a command prompt

(Topic number: 7802)

Installation of the IMPAX Client can be completely silent, or automated. This can simplify an IMPAX Client rollout, and eliminates the need for any user input during the installation.

Through a line command issued on the client workstation, the various installation settings and their values can be specified; otherwise, defaults are applied. The command can be distributed to users through a batch file, or through a software distribution tool such as Microsoft Systems Management Server (SMS).

To enable automated installation of the IMPAX Client software from a command prompt

1. At a command prompt, type

ImpaxClientSetup.exe /S /v"setting=value... /quiet"

where /S suppresses the initial InstallShield Wizard screen,

and /v allows for the specification of installation settings and their values,

and /quiet suppresses all the installation screens.

| Installation setting | Description | Value |
|----------------------|--|--|
| ALLUSERS | Specifies installation for current user only, or all machine users | <p>Default—All users, if person installing has administrative privileges; otherwise, current user</p> <p>NULL—Current user</p> <p>1—All users, if person installing has administrative privileges; otherwise, installation fails</p> <p>2—All users, if person installing has administrative privileges; otherwise, current user</p> <p>Any other value—default is applied</p> |
| USERNAME | User name | Default—Name registered during Windows installation |
| COMPANYNAME | Organization name | Default—Name registered during Windows installation |
| INSTALLDIR | Root installation directory | Default—C:\Program Files\Agfa\IMPAX Client |
| APPSERVER | Application Server name | Default— <i>blank</i> |
| AUTHENTICATION_TYPE | Authentication mode | <p>Default—IMPAX authentication</p> <p>1—IMPAX authentication screen prompts user for user ID and password</p> <p>2—User ID and password of current Windows or Windows smart card user is used to log into IMPAX</p> <p>3—Smart card authentication requires the user to have an NHS smart card to log into IMPAX</p> <p>Any other value—Default is applied</p> |

Spacing rules for installation settings

(Topic number: 7757)

When specifying installation settings values using the /v flag, certain rules regarding spacing of the settings must be followed.

- Leave no spaces between the /v flag and its settings. For example:
/v"ALLUSERS=2" (valid)
/v "ALLUSERS=2" (invalid)
- Separate each setting and value pair by a space from another setting and value pair. For example:
/v"ALLUSERS=2 USERNAME=Peter" (valid)
/v"ALLUSERS=2USERNAME=Peter" (invalid)
- Delimit spaces within a value with a \". For example:
/v"USERNAME=\"Peter Smith\"" (valid)
/v"USERNAME=Peter Smith" (invalid)

Examples of installation settings

(Topic number: 7801)

The following contains example combinations of settings to be used at the command line. Following each installation command is a table detailing what each value changes.

ImpaxClientSetup.exe /v"APPSERVER=radserver.radnet.healthorg.com ALLUSERS=NULL"

| | |
|--|------------------------------------|
| Initial InstallShield Wizard screen displayed? | Yes |
| All installation screens displayed? | Yes |
| User name | Agfa |
| Organization name | Agfa |
| Installation type | Current user |
| Installation directory | C:\Program Files\Agfa\IMPAX Client |
| Application server | radserver.radnet.healthorg.com |
| Authentication mode | IMPAX authentication |

**ImpaxClientSetup.exe /v"INSTALLDIR=\"C:\Rad Tools\Agfa\IMPAX Client\"
APPSERVER=radserver.radnet.healthorg.com /quiet"**

| | |
|--|------|
| Initial InstallShield Wizard screen displayed? | Yes |
| All installation screens displayed? | No |
| User name | Agfa |
| Organization name | Agfa |

| | |
|------------------------|--|
| Installation type | All users, if person installing has administrative privileges; otherwise, current user |
| Installation directory | C:\Rad Tools\Agfa\IMPAX Client |
| Application server | radserver.radnet.healthorg.com |
| Authentication mode | IMPAX authentication |

**ImpaxClientSetup.exe /S /v"APPSERVER=radserver.radnet.healthorg.com
AUTHENTICATION_TYPE=2"**

| | |
|--|--|
| Initial InstallShield Wizard screen displayed? | No |
| All installation screens displayed? | Yes |
| User name | Agfa |
| Organization name | Agfa |
| Installation type | All users, if person installing has administrative privileges; otherwise, current user |
| Installation directory | C:\Program Files\Agfa\IMPAX Client |
| Application server | radserver.radnet.healthorg.com |
| Authentication mode | Windows authentication |

13. Installing and running the Cross-Cluster Dictation Interlock tool

(Topic number: 48033)

The Cross-Cluster Dictation Interlock tool synchronizes the dictation status of studies between old and new IMPAX systems when these are running in parallel—such as may happen when using a training server, when using a traveling server (AS3000 sites), or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.



Note:

Do not confuse CCDI with Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later), running in parallel, to synchronize study status notifications and claim and assign messages between the two clusters as though they were one. For details, see “Understanding Dual Cluster Claim and Assign” (topic number 128193) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

A dictation interlock already exists within a single IMPAX cluster, preventing two users from dictating the same study. This tool extends that interlock to two IMPAX clusters: the previous version and

the new. It uses native components within IMPAX to send signals between the two systems that a study's dictation status has changed. During the installation and configuration, a new role and a service called Study Status Relay are created to convey and receive the messages.

Study statuses that are synchronized are the following:

- DICTATION_STARTED
- TRAINEE_DICTATION_STARTED
- INTERPRETATION_TRANSCRIBED
- INTERPRETATION_APPROVED
- DICTATION_COMPLETED
- TRAINEE_DICTATION_COMPLETED

Cross-Cluster Dictation Interlock installation prerequisites: IMPAX 5.2 or 5.3 upgrades

(Topic number: 48079)

The Cross-Cluster Dictation Interlock components are placed on the IMPAX 6.5.3 Application Server when the Business Services software is installed. You will find the components in the Tools sub-directory; for example, in C:\Program Files\Agfa\Impax Business Services\Tools\Cross-Cluster Dictation Interlock\Cross.Cluster.Dictation.Interlock_6.5.3.0.zip. You must extract the zip file. It contains both the 5.2/5.3 and the 6.5.3 components.

Select a computer in the IMPAX 5.2 or 5.3 cluster to place the Cross-Cluster Dictation Tool components on. It can be any computer running Windows, including a Client station, as long as that station does not get shut down or restarted frequently.

Copying the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

(Topic number: 48082)

To communicate dictation status with the IMPAX 6.5.3 system, Cross-Cluster Dictation Interlock components must be added to a Windows-based computer in the IMPAX 5.2 or 5.3 cluster.

To copy the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

1. On the 6.5.3 Application Server where the zip file was extracted, from the mvf-signal-relay directory, copy the mvf_signal_relay.exe and install_signal_relay.bat files.
2. On the IMPAX 5.2 or 5.3 computer to run the components on, in the C:\mvf\bin directory, paste the two files copied in the previous step.
3. Open a command prompt and change to the C:\mvf\bin directory.
4. Type **install_signal_relay.bat remote_host_name**

where *remote_host_name* is the host name or IP address of the Application Server that will be running the IMPAX 6.5.3 Cluster Dictation Interlock service.

5. Open the Windows Administrative Tools and select **Services**.
6. Start the service.

The `install_signal_relay.bat` file installs the `mvf_signal_relay.exe` as a Windows service, inserts default values into the `map_ini`, and creates a radiologist and a trainee radiologist user. These users are used by the service to change status when appropriate. The radiologist user is called *signal-relay* and the trainee radiologist is called *sig-relay-train*.

Updating map_ini values for Cross-Cluster Dictation Interlock

(Topic number: 48091)

For the connection between the 5.2 or 5.3 cluster and the IMPAX 6.5.3 cluster to work, some of the default values added to the 5.2 or 5.3 IMPAX MAP_INI file must be changed.

To update map_ini values for Cross-Cluster Dictation Interlock

1. Launch CLUI.
2. To update the remote hostname, type
update map_ini set ini_value='remote_host_name' where ini_section='signal-relay' and ini_key='remote_host'
 where *remote_host_name* is the name of the IMPAX 6.5.3 Application Server where the service will run.
3. To update the remote port value, type
update map_ini set ini_value='remote_port_value' where ini_section='signal-relay' and ini_key='remote_port'
 where *remote_port_value* is the TCP port where the Application Server listens for signals.
 - a. By default, the port number is 6000. To confirm the port number, navigate to the folder where `study-status-relay.bat` is installed (for example, `C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay`) and open the **Study.Status.Relay.exe.config** file in a text editor.
 - b. The port number value can be found under `<StudyStatusRelayConfiguration>` and between the `<SignalListenerPort>` and `</SignalListenerPort>` tags.
4. Optionally, change the default values of the `external_port`, `rad_user`, or `trainee_user` keys.

| INI_SECTION | INI_KEY | INI_VALUE | Description |
|--------------|---------------|---|---|
| signal-relay | external_port | A valid port to listen for incoming signals. Default value is 6000. | The TCP port to listen for signals coming in from the remote cluster (whereas <code>remote_port</code> is used for forwarding signals). |
| signal-relay | rad_user | The user name used when changing the study status as | If you change this value, you must also configure this user in |

| INI_SECTION | INI_KEY | INI_VALUE | Description |
|--------------|--------------|---|--|
| | | a radiologist. The default value is <i>signal-relay</i> . | the IMPAX 5.2 or 5.3 Service Tools. |
| signal-relay | trainee_user | The user name used when changing the study status as a trainee radiologist. The default value is <i>sig-relay-train</i> . | If you change this value, you must also configure this user in the IMPAX 5.2 or 5.3 Service Tools. |

Copying the 6.5.3 Cross-Cluster Dictation Interlock components

(Topic number: 59189)

Perform the following task on the IMPAX 6.5.3 Application Server.

To copy the 6.5.3 Cross-Cluster Dictation Interlock components

1. Copy the study-status-signal-relay folder from the Cross-Cluster Dictation Interlock zip in the Tools subdirectory to an appropriate folder on the 6.5.3 Application Server, such as to C:\Program Files\Agfa\Impax Business Services.

The service will run from anywhere, but you should place it in a folder that is unlikely to be deleted.

2. Open a command prompt and change to the directory containing the copied files.
3. Change to the **study-status-signal-relay** subdirectory.
4. Type

import-study-status-relay.bat

5. In the Apply Study Status Relay ADAM Schema dialog, click **OK**.

This creates a Study Status Relay role.

Configuring a firewall exception for the Cross-Cluster Dictation Interlock tool

(Topic number: 111054)

The Windows firewall filters and blocks unsolicited incoming network traffic. To use the Cross-Cluster Dictation Interlock tool, you must define an exception in the Windows firewall to allow the TCP port to listen for signals coming in from the remote cluster.

To configure a firewall exception for the Cross-Cluster Dictation Interlock tool

1. On the IMPAX 6.5.3 Application Server, open Control Panel.
2. Select **Windows Firewall**.
3. Switch to the **Exceptions** tab.
4. Click **Add Port**.

5. In the Name field, type a name for the exception; for example, **Study Status Relay** or something similar.
6. In the Port field, type the number of the TCP port to listen for signals from the remote cluster.
 - a. By default, the port number is 6000. To confirm the port number, navigate to the folder where study-status-relay.bat is installed (for example, C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay) and open the **Study.Status.Relay.exe.config** file in a text editor.
 - b. The port number value can be found under <StudyStatusRelayConfiguration> and between the <SignalListenerPort> and </SignalListenerPort> tags.
7. Click **OK**.
8. To close the Windows Firewall dialog, click **OK**.
9. Configure a firewall exception on the Windows machine in the remote cluster as well.


The new firewall exception takes effect immediately. You do not have to restart the server.

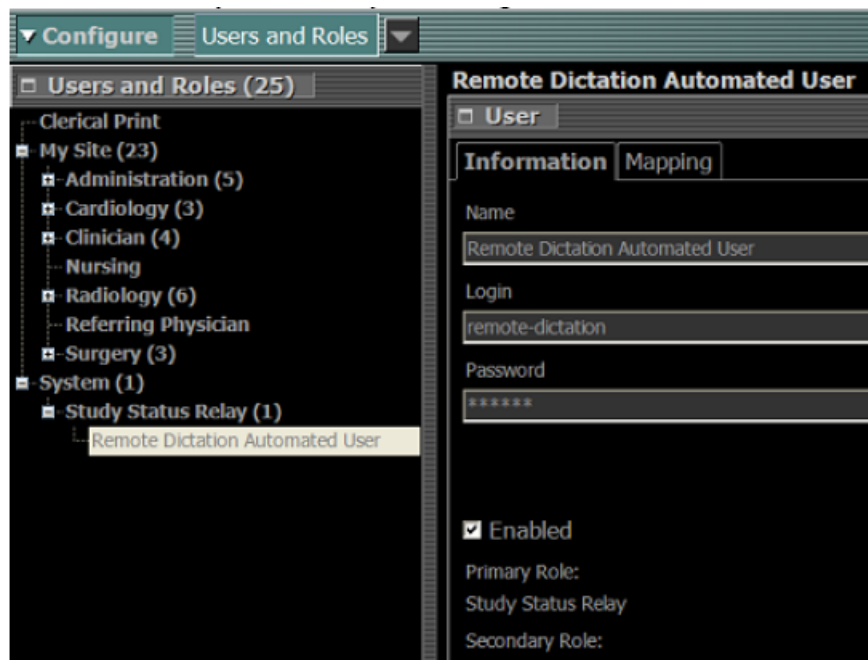
Configuring the Study Status Relay role

(Topic number: 48223)

The newly created Study Status Relay role requires a user called remote-dictation, and an appropriate license. Perform this task on the IMPAX 6.5.3 Application Server.

To configure the Study Status Relay role

1. Launch an IMPAX Client connected to the Application Server where the Study Status Relay role was created.
2. Log into the Client as an Administrator user.
3. From the **Configure** drawer menu , select **Users and Roles**.
4. In the navigation pane, right-click the **Study Status Relay** role and select **Add User**.
5. In the details pane, under the User bar, switch to the **Information** tab.
6. Type a Name for the user, such as **Remote Dictation Automated User**.
7. In the Login field, type **remote-dictation**.
8. Type in a Password and note what this password is.



9. In the navigation pane, select the **Study Status Relay** role again.
10. In the details pane, expand the **Licensing** bar.
11. In the navigation pane, right-click the **Study-Status Relay** role and select **Add License > Add license_type**

where *license_type* is an appropriate and available license for this role. (Dictation is not a license-controlled feature.)

The changes are saved automatically when you switch context.

Configuring the Study Status Relay service

(Topic number: 48230)

You can now configure the communication service between the previous version of IMPAX and IMPAX 6.5.3. The goal is to transmit relevant study status changes between these two clusters.

To configure the Study Status Relay service

1. On the 6.5.3 Application Server, open a command prompt.
2. Change to the **C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay** directory.
3. Type
Study.Status.Relay.EncryptionTool.exe password_for_remote-dictation_user
 where *password_for_remote-dictation_user* is the password you defined and noted for the remote-dictation user.
4. Copy the long string that is returned from this command.

**Tip:**

If it is too difficult to copy the string from the command-line interface, output the result to a text file, then copy the string from that file.

5. Open the Study.Status.Relay.exe.config file in a text editor.
6. Under StudyStatusRelayConfiguration, between the <UserPassword> and </UserPassword> tags, paste the long string.

For example:

```
...
<!--
The password to use when logging in as the UserId account. This
value is the BASE-64 encoded version of password that has been
encrypted using information specific to this machine.
Default: <none>
-->
<UserPassword>AQAAANCMnd8BFdERjHoAwE/Cl+sBAAAABbkEiV/jjUWSVOOgdR9
RYQQAAACAAAAAADZgAAqAAAABAAAACiWdpGofmXAMqUZ5YsA5lkAAAAASAAACg
AAAAEAAAAMWx8NfIDRPiPIV+727lgQgQAAAA5wKiHz2sKwU4IlvifPm02BQAAAD5u
pFcxlJeslvaYnwvF5WMJo/6lQ==</UserPassword>
...
```

7. Update the values of **LoginServiceUrl**, **StudyInfoServiceUrl**, and **MessagingServiceUrl** with the local Application Server's fully qualified domain name.
8. Update the value of **RemoteSignalHost** with the host name or IP address of the computer in the previous-release version of IMPAX that is running the study-status-relay service.
9. Save and close the file.
10. In the command prompt, type

install_study_status_relay_service.bat

If a log4net error is returned, you can safely ignore this message.

To diagnose other errors or check status, consult the Study.Status.Relay.log file located in the study-status-signal-relay folder.

If ready to use the service, proceed to the next topic, *Running the Cross-Cluster Dictation Interlock tool* (refer to page 70).

Running the Cross-Cluster Dictation Interlock tool

(Topic number: 47379)

The Cross-Cluster Dictation Interlock (CCDI) tool synchronizes both the dictation status and the claim status of studies between the previous version of IMPAX and IMPAX 6.5.3, when these are running in parallel—such as may happen when using a training server, when using a traveling server, or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.

Synchronization of the claim status of studies occurs only between versions of IMPAX that support shared workflows from which radiologists can then claim ownership of studies.



Note:

Do not confuse CCDI with Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later), running in parallel, to synchronize study status notifications and claim and assign messages between the two clusters as though they were one. For details, see “Understanding Dual Cluster Claim and Assign” (topic number 128193) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

To run the Cross-Cluster Dictation Interlock tool

1. On the 6.5.3 Application Server where the Relay service is running, open a command prompt.
2. Type the following command:
net start StudyStatusRelayService
3. Exit the command prompt.

Taking system inventory

3

Install and run key Migration Tools during the preparing to upgrade phase. You must complete these initial tasks when preparing for the migration and upgrade of an IMPAX 5.2 or 5.3 cluster or a WEB1000 site to IMPAX 6.5.3. Some of these commands cannot be run against an IMPAX 4.5 server.

More information on these Tools is available in *Migration Tools commands and parameters* (refer to page 110).

1. Creating the pre-migration schema

(Topic number: 6716)

To create the pre-migration database schema and data, navigate to the directory containing the Migration Tools and run the script that creates the tables in the mvf database. The Migration Tools use these tables during the preparing to upgrade phase.

For IMPAX sites, create the schema on the following servers:

- All current-version IMPAX Database Servers
- All current-version IMPAX single-host servers
- The training server
- The traveling server (used for AS3000 upgrades)

At a WEB1000-only site (no IMPAX database), create the schema on the WEB1000 Server.

Run these commands directly on these servers **or** from the Application Server connected to these servers. If have you run them right on the servers, do **not** run them again from the Application Server.

Creating the pre-migration schema on an AS300 or WEB1000 server

(Topic number: 57475)

These steps assume that the Migration Tools have been installed on the Database Server that you are running the commands on, and that you are logged into Windows as an administrator-level user.

To create the pre-migration schema on an AS300 or WEB1000 server

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.
3. Type the following:
build-impax-mig-schema.bat sa sa mvf
4. At the `Do you want to proceed?` prompt, type **y**.

The pre-migration database schema and data are created.

Creating the pre-migration schema from the Application Server

(Topic number: 57481)

To perform this task, you must be logged into Windows as an administrator-level user.

Instead of working at individual servers, you can run the command to create the database schema from the connected Application Server. If you have already created the pre-migration schema on the server itself, do not create it again from the Application Server.

To create the pre-migration schema from the Application Server

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.
3. If the Application Server is connected to a SQL Server database, type
build-impax-mig-schema.bat user_name password mvf_version_number
For example, type **build-impax-mig-schema.bat sa sa mvf_52**
4. If the Application Server is connected to an Oracle database, type **build-impax-mig-schema.bat** without any additional parameters.

The pre-migration database schema and data are created.

2. Migrating reports to the training server

(Topic number: 119286)

Migrating reports from the production server to the training server allows users to work with reports while using the IMPAX 6.5.3 training cluster. Perform the following tasks to migrate reports to the training server:

1. Install the Oracle 10.2.0.1 OLE Driver (refer to page 74).
2. Set up the connection to the Oracle database (refer to page 75).
3. Migrate the reports (refer to page 75).

Installing the Oracle 10.2.0.1 OLE Driver

(Topic number: 119140)

Because the MigrateTRServer tool is not compatible with Oracle 11.2.0.2 (the version of Oracle used by IMPAX 6.5.3), the Oracle 10.2.0.1 OLE Driver must be installed on the machine where you are going to run the MigrateTRServer tool.

To install the Oracle 10.2.0.1 OLE Driver

1. Unzip the 10201_client_win32.zip file.
2. Run the unzipped Oracle 10g Client installer, **setup.exe**.
3. In the Welcome dialog, click **Next**.
4. In the Select Installation Type dialog, select **Custom** and then click **Next**.
5. In the Specify Home Details dialog, under Destination, type
OraClient10g_home1 (Name)
c:\oracle\product\10.2.0\db_1 (Path)
6. Click **Next**.
7. In the Available Product Components dialog, clear all component checkboxes except **Oracle Windows Interfaces 10.2.0.1.0** and **Oracle Provider for OLE DB 10.2.0.1.0**.
8. Click **Next**.
9. In the Product-Specific Prerequisite Checks dialog, click **Next**.
10. In the Oracle Home Environment Variable Set dialog, click **Next**.
11. In the End of Installation dialog, click **Next**.

Setting up the connection to the Oracle database

(Topic number: 119284)

The Oracle 10g Client software installs the drivers and programs required to communicate with the Oracle Server. Ensure that the network and TCP/IP are properly installed and configured.

To set up the connection to the Oracle database

1. On the Application Server component of the training server cluster, navigate to the **C:\Program Files (x86)\oracle\network\admin** directory.
2. Using a text editor, open the **tnsnames.ora** file and add the following entry:

```
MVF_ts.WORLD =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = <name of Oracle database
server>)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = MVF)
    )
  )
```

Migrating reports to the training server

(Topic number: 9895)

Migrating reports from the production server to the training server allows users to work with reports while using the IMPAX 6.5.3 training cluster.


- Installed the Migration Tools on the Application Server component of the training server cluster
- Created the pre-migration schema on the Database Server component of the training server cluster



Important!


To ensure that failures do not occur, do not leave tools such as SQLPlus, WinSQL, or Isql connected to the MVF database (both the source and target MVF) when migrating worklist data.

To migrate reports to the training server

1. On the Application Server component of the training server cluster, run the **C:/mvf-mig6/MigrateTRServer/ MigrateTRServer.exe** application.
2. Select the **Migrate Report Data** checkbox.
3. Under Source, supply the database information for the production server, as follows:
 - a. Click **Modify**. 

- b. In the Data Link Properties dialog, select **Microsoft OLE DB Provider for SQL Server**. Click **Next**.
 - c. In the Data Source field, type mvf_ts.world or the name of the tns entry that was created in tnsnames.ora.
 - d. Select **Use a specific name and password** and type the database user name—normally **sa**.
Do not specify the password at this time.
 - e. In the Select the database on the server field, type **mvf**.
 - f. Click **OK**.
4. In the Migrate training/traveling server data dialog, under Source, type the database password.
Sample configured Source settings in Migrate training/traveling server data dialog



- a. Click **Modify**. 
 - b. In the Data Link Properties dialog, select **Oracle Provider for OLE DB**. Click **Next**.
 - c. In the Data Source field, type mvf_ts.world or the name of the tns entry that was created in tnsnames.ora.
 - d. Select **Use a specific name and password** and type the database user name—normally **dbadmin**.
 - e. In the Select the database on the server field, type **mvf**.
 - f. Click **OK**.
6. On the training server, the database password will be encrypted. To retrieve it, use the following command at C:\mvf\bin:
passkey -M QUERY -u sa
Then type the retrieved value into the Destination Password field.
 7. Click **Migrate Data**.
A DTSResults dialog opens showing the result of the data migration from the training to the production server. Scan it for any ERROR messages that you need to resolve.
 8. When the migration is complete, close the DTSResults dialog.

The training server database is now staged with report data from the production server database.

3. Collecting information on IMPAX clients, servers, stations, and printers

(Topic number: 6721)

Before upgrading to IMPAX 6.5.3, use the `migration_inventory` tool to capture the current state of the system for later comparison. Perform this task on any computer with access to the IMPAX 5.2 or 5.3 database and on which the Migration Tools have been installed, or on the IMPAX Database Server itself.

The tool produces two different reports, depending on the parameters used.

| Parameter | Report produced | Availability |
|-----------|---|---------------------------------|
| -c | Full summary of all the Server and Client machines in the cluster, listing the machines and their functions (whether the machine has an archive, cache, and so on) | Preparing to upgrade phase only |
| -s | System snapshot that lists the number of studies in the system and in cache, the number of objects in the system, and all of the modalities and printers, along with their related configuration data | Pre- and post-upgrade phases |
| -a | Both reports | Preparing to upgrade phase only |

To collect information on IMPAX clients, servers, stations, and printers

1. Type

```
migration_inventory.exe -s [-d database_name -U database_user_name -P database_password] -D database_server_host_name
```

If running the command on the Database Server itself, the database name, user name, and password parameters are optional, but the Database Server host name is still required. The output is stored in the `migration_info` table.

2. To create a report file with this information, type

```
mig_reporter.exe -d mvf_version_number -t system_inventory_tool
```

This command writes the output of the `migration_inventory` command to a report file in the `\mvf-mig6\reports` directory.

4. Running an initial report on study archiving status

(Topic number: 6630)

To produce a report of studies that are in cache but are not archived, you can run a command on any computer with an MVF connection to the IMPAX database (such as the Application Server) or

on the IMPAX Database Server itself. The studies to be identified can be moved to archive prior to migration.

The Study Archive Report tool uses various criteria to determine if a study is eligible for the report. For example:

- A study is not eligible if the `archive_flag` is not set to 'T'.
- A study is considered fully archived if all objects—with the exception of ignored objects—are archived. (Objects may need to be ignored if a remote PACS cannot handle certain objects.)
- One study may be present on more than one cache, and so multiple rows are returned. The tool then determines which row is the best match for a particular study.



Note:

If the system cannot determine the station (source) configuration for a study, the study cannot be archived and is not eligible for the study archive report. To avoid this problem, ensure that all studies are properly assigned to a station.

Alternative to mig-study-archive-report

While we recommend that the `mig-study-archive-report` be used, it may take a long time to run. If necessary, as an alternative, you can use the `show-unarchived-studies` tool instead. But be aware that this tool is much simpler, and outputs only a list of studies that *appear* to be unarchived.

To run the `show-unarchived-studies` tool

1. Type **`show-unarchived-studies.bat`**.

The output file produced is called `study_to_store.clui`.

To archive the studies noted in the file, you can run the **`clui -i study_to_store.clui`** command.

Running a report on study archiving status on a Windows station

(Topic number: 57484)

Use this command on a Windows-based station, whether the Database Server itself or the Application Server connected to the server.

To run a report on study archiving status on a Windows station

1. At a command prompt, type

`mig-study-archive-report.exe -d mvf_version_number -U IMPAX_database_user -P IMPAX_database_password`

where *version_number* is either 52 or 53.

This command returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE. The output is stored in the `migration_info` table.

2. To create a report file with this information, type

mig_reporter.exe -d mvf_version_number -t mig-study-archive-report

where *version_number* is either 52 or 53.

The report file is created in the C:\mvf-mig6\reports folder.

The format of the report is as follows (each line includes a common date/time prefix):

```
[Study ref] ; [Accession number] ; [Patient ID] ; [Study status] ; [HIS verified  
date and time] ; [Study date] ; [Archive flag] ; [Total objects] ; [Configured  
archive AE] ; [Archived AE] ; [Archived volume type] ; [Number of archived  
objects] ; [Number of ignored objects for PACS archive] ; [Number of cache  
objects only on disabled AE] ; [Archive status information (either  
Partially_Archived or Completely_Unarchived)]
```

To return different information, you can run the command with other parameters, as described in mig-study-archive-report.exe (refer to page 115); for example, you can change the separator by using the -x parameter.

5. Checking the operating system

(Topic number: 9918)

On each server you plan to upgrade (rather than replace), check the Windows operating system to ensure that it is healthy. This helps to prevent issues such as bad disk systems or server hardware faults from affecting the upgrade.

For details on performing operating system checks, refer to the appropriate Agfa Service documentation and Microsoft documentation.

6. Preparing for enhanced database security

(Topic number: 6638)



Important!

This topic applies only to IMPAX AS300 (SQL database) sites.

For AS300 clusters, security and armoring has been strengthened from the IMPAX 5.2 levels. Among the settings affected by the IMPAX 6.5.3 installation program are the following:

- All unnecessary Windows services and applications are disabled.
- The Named Pipes TCP protocol is no longer supported.
- All IMPAX services are configured to run under restricted user accounts that can access only the resources they need.
- To ensure that the SQL database account used for access does not have administrative privileges, access to dangerous and unnecessary extended stored procedures is removed or disabled.

- Windows firewall rules are created and applied to block external access to unused ports.
- The Administrators group is automatically created by Windows; however, the list of files and registry keys that this group has access to is modified during the IMPAX installation.
- The ImpaxServerGroup account is created and the list of files and registry keys that this group has full access to is configured.
- The following user accounts are created: ImpaxSQLUser, ImpaxAdminUser, ImpaxServerUser, and AgfaService.

Remember these changes when planning to migrate service-level user accounts and if intending to reuse existing server stations. For more information on these security settings, refer to “Securing Windows-based systems in IMPAX (armoring): Reference” (topic number 9311) and related topics in the *IMPAX 6.5.3 Server Knowledge Base*.

Preparing for user migration

4

The following information outlines the steps for preparing the IMPAX 4.5, 5.2, or 5.3 and WEB1000 user data for migration to the IMPAX 6.5.3 AD LDS database.



Note:

If the IMPAX 4.5, 5.2, or 5.3 site is using LDAP user authentication, user data is typically not migrated, so these tasks may not apply.

1. Collecting data on the WEB1000 or IMPAX user base

(Topic number: 57497)

Use the Migration Tools to generate a summary list of all WEB1000 and IMPAX user types on the system. You can use this list to determine how many IMPAX 6.5.3 licenses of each type are needed. Perform this task on the Application Server, installed as described in *Installing a training server cluster* (refer to page 48).

To collect data on the WEB1000 or IMPAX user base

1. Open a command prompt on the Application Server and navigate to **C:\mvf-mig6\bin**.
2. At the prompt, type
user_base_summary.exe -d mvf_version_number -U IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password
where *version_number* is 45, 52, or 53.
3. Type

```
mig_reporter.exe -d mvf_version_number -U IMPAX_4.5_5.2_or_5.3_database_user -P  
IMPAX_4.5_5.2_or_5.3_database_password -t user_base_summary
```

Viewing the report on the WEB1000 or IMPAX user base

(Topic number: 57500)

After the data is generated, you must run another command to view it.

To view the report on the WEB1000 or IMPAX user base

1. On the Application Server, navigate to **C:\mvf-mig6\reports**.
2. Using a text editor such as Notepad, open the file **database_server_name_user_base_summary_REPORT_1_date_and_time**.

The report contains summary information on the number of users in the system for each privilege type and the list of all privileges on the system.

A comparison of user privileges in IMPAX 6.5.3 and IMPAX 5.2 or 5.3 is available in the “Privilege and permission comparison” section (topic number 54910) in the *IMPAX Migrations Reference Guide*. Most of this information also applies to IMPAX 4.5.

2. Mapping IMPAX Client station names to machine identifiers

(Topic number: 6661)



Important!

This topic applies only to IMPAX upgrades and not to migrations from WEB1000.

Perform the following tasks to extract station names and configurations from the IMPAX 4.5, 5.2, or 5.3 database and create a mapping of IMPAX Client machine names to the IMPAX 6.5.3 AD LDS machine identifiers. You can perform this step for multiple Clients at once (as follows), or you can repeat the procedure on each Client individually (refer to page 85).

Mapping multiple Client station names simultaneously

(Topic number: 6659)

To map multiple Client station names simultaneously, you have to perform a set of procedures:

- Get the list of IMPAX Client station names
- Update the host_list file
- If applicable, modify Windows XP network access settings

- Run the command to map the Client station names to machine identifiers
- Verify that all Client station names have been mapped

Details on each of these tasks follows.

Getting a list of IMPAX Client station names

(Topic number: 57503)

Before you can map multiple IMPAX Client station names to machine identifiers, you must gather a list of all the names.

To get a list of IMPAX Client station names

1. On the Application Server, open a command prompt and change to the **C:\mvf-mig6\bin** directory.
2. Type the following:

```
get_station_mapping.exe -m List -d mvf_version_number -U  
IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password  
where version_number is one of 45, 52, or 53.
```

3. Type the following:

```
mig_reporter.exe -d mvf_version_number -U IMPAX_4.5_5.2_or_5.3_database_user -P  
IMPAX_4.5_5.2_or_5.3_database_password -t get_station_mapping
```

The list of IMPAX Client station names is created and is saved to C:\mvf-mig6\reports as **database_server_name_station info mapping tool_report_1_date_time**.

Updating the host_list file

(Topic number: 57506)

Before you can map Client station names to machine identifiers, you must update the host_list file with the host name or IP address of each Client station to be mapped.

To update the host_list file

1. Open the report created when getting a list of IMPAX Client station names (refer to page 83).
2. From the C:\mvf-mig6\bin folder, open the **host_list** file.

The host_list file is used by the run_psexec.bat command to determine what IMPAX Client station names need to be mapped to Client station identifiers.

3. Using the station info mapping tool report, add each IMPAX Client station host name or IP address to the host_list file.

If the IMPAX Client machines have different administrator usernames and passwords, you must also add the username and password to the host_list file. For example:

```
Client_host_name_or_IP_address administrator_username administrator_password
```

If the administrator usernames and passwords are the same for all the IMPAX Client machines, do not include that information in the host_list file.

4. Save the host_list file.

Modifying the Windows XP network access settings

(Topic number: 57509)

Windows XP Home computers and Windows XP Professional computers not on a domain default to Guest for network access. The Guest configuration assumes a number of access policies that prevent the run_psexec.bat script from running effectively. To allow the script to run in such cases, you must modify the Windows XP security settings on the affected Client stations.

To modify the Windows XP network access settings

1. Open the Windows Administrative Tools.
2. Select **Local Security Policy**.
3. In the navigation pane, select **Local Policies > Security Options**.
4. Double-click **Network access: Sharing and security model for local accounts**.
5. If the selected list option is Guest only - local users authenticate as Guest, change it to **Classic - local users authenticate as themselves**.
6. Click **Apply**. Click **OK**.
7. To close the Local Security Settings window, select **File > Exit**.

Mapping multiple IMPAX Client station names to machine identifiers

(Topic number: 57512)

You use the run_psexec.bat utility to create a mapping between the IMPAX Client machine names and the IMPAX ADAM machine identifiers.

To map multiple IMPAX Client station names to machine identifiers

1. If the administrator usernames and passwords are the same for all IMPAX Client machines, on the Application Server, open a command prompt.
2. Type

run_psexec.bat [administrator_username administrator_password]

If all IMPAX Client host names listed in the host_list file include the administrator username and password information for the machine, you do not have to include the username and password with the run_psexec.bat command.

The mvf database is updated with the IMPAX Client station names and appropriate mappings. During the user migration, this data is imported into the ADAM database.



Note:

If you are logged into the server with a domain username and password that is the same as the username and password on a remote station, error messages appear while `run_psexec.bat` is executing. You can ignore these error messages.

Verifying that all IMPAX Client station names have been mapped

(Topic number: 57515)

After you have run the command to map Client station names to machine identifiers (refer to page 84), you can verify that everything worked correctly.

To verify that all IMPAX Client station names have been mapped

1. Run the **get_station_mapping.exe** command.
2. Run the following command:

```
mig_reporter.exe -d mvf_version_number -U IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password -t get_station_mapping
```
3. Verify that no station names are listed in the report.
4. If any station names are listed, add them to the `host_list` file and run the **run_psexec.bat** command again.

Mapping individual Client station names

(Topic number: 6660)

Instead of mapping all Client station names at once, you can perform a set of tasks on each Client station individually.

Installing the appropriate Migration Tools on the Client station

(Topic number: 57529)

To perform the mapping tasks right on the Client station, some of the Migration Tools are required.

To install the appropriate Migration Tools on the Client station

1. Install the `impax_65_migration-winpkg-6.5.3.xxx.exe` Migration Tool, as described in *Installing the IMPAX 6.5.3 Migration Toolbox* (refer to page 54).

or

Copy and paste the `get_station_mapping.exe` and `mig_reporter.exe` files onto the Client, then copy the DLL files `MFC71.dll` and `msvcr71.dll` into the Client path (such as the `Windows\system32` directory).

Retrieving the IMPAX Client station name

(Topic number: 57532)

Once the appropriate Migration Tools are available on the Client station, you can use them to retrieve the station name.

To retrieve the IMPAX Client station name

1. On the Client station, open a command prompt.
2. Change to the location of the `get_station_mapping.exe` file.
3. Type the following:

```
get_station_mapping.exe -m List -d mvf_version_number -U IMPAX_database_user -P  
IMPAX_database_password
```

4. Type the following:

```
mig_reporter.exe -t get_station_mapping -d mvf_version_number -U IMPAX_database_user  
-P IMPAX_database_password
```

A file with the IMPAX Client station name is created and is saved to `C:\mvf-mig6\reports` as `database_server_name_station info mapping tool_report_1_date_time`.



Important!

The `mig_reporter.exe` command may fail when you first run it if the directory `C:\mvf-mig6\reports` does not exist. If this happens, run the command again. When the command is first run, it creates the `C:\mvf-mig6\reports` directory, and will run successfully after that.

Mapping an IMPAX Client station name to a machine identifier

(Topic number: 57538)

Once the IMPAX Client station name is retrieved, you can map it to a machine identifier.

To map an IMPAX Client station name to a machine identifier

1. On the Client station, open a command prompt.
2. Navigate to the location of the `get_station_mapping.exe` file.
3. At the prompt, type the following:

```
get_station_mapping.exe -m add -d mvf_version_number -U IMPAX_database_user -P  
IMPAX_database_password
```

The mvf database is updated with the IMPAX Client station name and appropriate mappings.

During the user migration, these mappings are imported into the AD LDS database.

3. Exporting user data

(Topic number: 9920)

Follow this procedure to export all IMPAX 4.5, 5.2, or 5.3 or WEB1000 user information. For IMPAX, this exported data includes access controls, privileges, preferences, and station configurations. For WEB1000, it includes information such as user IDs, privilege levels, access control groups and features, and team information.

The XML file created by this procedure can be used for reference, and some of the user data is later imported into the IMPAX 6.5.3 AD LDS database.



CAUTION!

If you need to run the `migrate-users.exe -m mvf2xml` command a second time on the same database, you must delete all entries from the `LDAP_user_mapping` table in the database before proceeding.

To export user data

1. Open a command prompt on the Application Server.
2. Change to the `C:\mvf-mig6\UserMigration` directory.
3. To export IMPAX 4.5, 5.2, or 5.3 user information, type

```
migrate-users.exe -m mvf2xml -d mvf_version_number -U  
IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password
```

If this is a WEB1000-only site, skip to the next step.

4. To export WEB1000 user information after exporting the IMPAX MVF data, type
**migrate-users.exe -m mvf2xml -d mvf -U MVF_database_user -P MVF_database_password
-ud mvf_web -uU WEB1000_database user -uP WEB1000_database_password**

or

To export **only** WEB1000 users information (no IMPAX data to migrate), type

```
migrate-users.exe -m mvf2xml -d mvf_web -U WEB1000_database user -P  
WEB1000_database_password
```

Depending on the number of users being exported, this step can take up to 20 minutes to complete.

If IMPAX parameters were included, the `users.xml` file is created on the server, listing all users and their preferences and station configurations. Wizards and other information that will not be migrated to IMPAX 6.5.3 are also exported to this XML file for reference. Once an IMPAX Client workstation has been installed and configured, using the text file created from the exported IMPAX 5.2 or 5.3 Select wizards, create the appropriate IMPAX 6.5.3 standard worklists. For additional information on standard worklists, refer to “Managing studies using worklists” (topic number 8430) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

If WEB1000 parameters were included, the `webusers.xml` file is created on the server, listing all the users and their team, privilege, and access control information.

Information about other parameters supported by this tool is available in *migrate-users.exe* (refer to page 114).

Deleting special characters in user names

(Topic number: 60402)

IMPAX 6.5.3 is more restrictive on what constitutes a valid user name than IMPAX 5.3 and earlier and WEB1000 were. To avoid problems in exporting user profiles into AD LDS, delete invalid characters from the exported user names in advance.

To delete special characters in user names

1. Open the **users.xml** file in a text editor.
2. In each UserName and Fullname field, check for and delete any instances of the following characters:
`= + < > # ; / \`
3. Save and close the **users.xml** file.
4. Repeat with the **webusers.xml** file, if applicable.

4. Planning the migration of user preferences

(Topic number: 55014)

IMPAX 6.0 and later introduces the concept of *inheritance* to user preferences. With inheritance, users can acquire their preferences from the roles they belong to. Preferences are defined by groups, and most (other than hanging protocols and image wizards) are non-merged, so that if any one of the preferences in a group is modified at the user level, that whole group of preferences is no longer inherited from the role. (For more information, refer to “Preferences: Key concepts” (topic number 9426) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*.)

Migrating user preferences from IMPAX 4.5, 5.2, or 5.3 can interfere with how you would prefer to set up preference inheritance in IMPAX 6.5.3, because the migrated preferences become associated with *users* rather than *roles*. Therefore, these users get custom preferences for a whole group of settings, rather than inheriting preferences. Changing preferences for all users in a role therefore becomes more cumbersome, because each user has to be configured individually instead of just the one role all users belong to.

To mitigate the potential pitfalls, work with the site to effectively plan the migration of user preferences, following steps such as the following:

1. Define the appropriate hierarchy of roles and users, determining which preferences should be inherited by all.

For help with this, consult “Determining the hierarchy of roles and users” (topic number 9440) in the *IMPAX 6.5.3 Client Knowledge Base: Extended* and the list of *IMPAX 5.2 preferences migrated to IMPAX 6.5.3* (refer to page 118).

2. Define which preferences will be getting migrated at the user level, therefore overriding role inheritance, by consulting the exported user data (refer to page 87) and the list of *IMPAX 5.2 preferences migrated to IMPAX 6.5.3* (refer to page 118).
3. Pinpoint areas where the migrated preferences would interfere with the preferred inheritance model.

Depending on how many preference groups would be affected, and how many users need migrating, you can then manage the problem one of two ways:

1. Do not migrate users. Instead, re-create them all in the training server cluster.
- or
2. Migrate the users, then remove the custom preferences where needed.

To override *all* custom preferences within a role, you can use the Configure area **Use roleName Settings for All** command, as described in “Overwriting custom preferences” (topic number 9425) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*. To delete particular preferences only, you can use the Profile Update tool installed on the Application Server, as described in Removing a preference from a role’s sub-roles and users.

Migrating hanging protocols

(Topic number: 10060)

IMPAX 6.0 and later has introduced a new method of storing user preferences. As a result, hanging protocols once stored as a system or user configuration are now assigned to roles and individual users. Because of this architectural change, when migrating from IMPAX 5.2 or 5.3, only user hanging protocols are migrated; system hanging protocols are not.

You may therefore wish to do some analysis on the IMPAX 5.2 or 5.3 system hanging protocols before migrating the user data, to plan how they might map into the IMPAX 6.5.3 role hierarchy. For more information on configuring hanging protocols in IMPAX 6.5.3, refer to the “Setting hanging protocols” section (topic number 8753) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

5. Finding the exported IMPAX Select wizards

(Topic number: 29641)



Important!

This topic applies only to IMPAX upgrades and not to migrations from WEB1000.

Follow this procedure only if the number of wizards is small. For managing many wizards, consult *Tips for managing large numbers of wizards* (refer to page 90).

IMPAX Select wizards are exported into the users.xml file created when exporting the IMPAX user information. Because of the introduction of standard worklists in IMPAX 6.0 and later, these exported Select wizards cannot be imported into IMPAX 6.5.3. Use the contents of the users.xml file to define which Select wizards must be re-created as standard worklists.

For additional information on standard worklists, refer to the “Managing studies using worklists” section (topic number 8430) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

To find the exported IMPAX Select wizards

1. In a text editor such as Notepad, open the users.xml file.
2. Search for the text **<preference name="UserSelectWizards">**.

All the Select wizards for a single user are grouped together under this heading.

To determine what user created the Select wizards, scroll up through the document to find the line starting with **<user userID=**. The *userName=* value in this line identifies who created the Select wizards in this group.

3. To gather all Select wizard information in a single file, copy all the text between the **<MacroName>** and **</MacroText>** markers for this user and paste them into a new document. Repeat this for each Select wizard listed for this user.

For a sample of how a Select wizard is displayed in the users.xml file, refer to the sample Select wizard that follows.

4. Search the users.xml file for the next user’s wizards and copy all the user’s wizard information into the new document. Repeat for all users in the users.xml file.
5. Once completed, save the Select wizard document and use it to determine what standard worklists to create in IMPAX 6.5.3.
6. Create standard worklists for the identified Select wizards.
7. To define the core set of standard worklists needed at the site, analyze the compiled text document and remove any duplicate Select wizards and wizards using redundant features.

For more information, refer to “Relating worklists to department workflow” (topic number 8446) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

Sample Select wizard

```
<wizard>
  <MacroName>New XA Today</MacroName>
  <Ordinal>4</Ordinal>
  <MacroText><![CDATA[fw_reset_finder();fw_recycle_worklist();
fw_change_criteria("STUDY_DATE", "", "TODAY");
fw_change_criteria("STUDY_DATE", "TODAY", "TODAY");
fw_change_criteria("MODALITY", "XA", "XA");
fw_refresh_query(); fw_move_selections_to_worklist()]]></
MacroText>
</wizard>
```

Tips for managing large numbers of wizards

(Topic number: 10603)

Larger sites commonly have over a thousand wizards in the system. With this number of wizards, the users.xml file is very large and time-consuming to sort through.

To ease the process, try the following:

- Simple text editors such as Notepad or Wordpad do not handle large files very well. You will get better results by using a dedicated Text or XML editor such as XMLpad or Ultraedit.
- Use CLUI to parse the list. The following SQL commands can be run from CLUI to remove duplicate wizards and to sort the wizards by name, making the list of wizards smaller and easier to manage:

```
select distinct(macro_text) from mitra_finder_wizards order by macro_text
```

```
select macro_name, '!', count(*), '!', macro_text from mitra_finder_wizards group by  
macro_text, macro_name order by macro_text, macro_name
```

You can save these queries to a file on the system, which can then be examined and sorted using Microsoft Excel.

The following information outlines the steps required to successfully migrate WEB1000 and IMPAX 4.5, 5.2, or 5.3 user data into the IMPAX 6.5.3 AD LDS database.



Note:

If the IMPAX 4.5, 5.2, or 5.3 site is using LDAP user authentication, however, user data is typically not migrated, so this information may not apply.

1. Recording and disabling the password and account lockout policies

(Topic number: 6707)

The password and account lockout policies required by the site are determined by the hospital's IT department. During the preparing to upgrade phase, these policies must be disabled so that user data can successfully be migrated to IMPAX 6.5.3. IMPAX 4.5, 5.2, or 5.3 passwords are unlikely to conform to the new IMPAX 6.5.3 password standards, so they would fail if the policies were left in place.

For a description of each password and account lockout policy, refer to “Password and account lockout policies: Reference” (topic number 11366) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

Before disabling the settings, record the password and account lockout policy settings.

Password policy settings

(Topic number: 6646)

| Password policy | Setting |
|--|---------|
| Enforce password history | |
| Maximum password age | |
| Minimum password age | |
| Minimum password length | |
| Password must meet complexity requirements | |
| Store password using reversible encryption for all users in the domain | |

Account lockout policy settings

(Topic number: 58212)

| Account lockout policy | Setting |
|-------------------------------------|---------|
| Account lockout duration | |
| Account lockout threshold | |
| Reset account lockout counter after | |

Disabling the password and account lockout policies

(Topic number: 6734)



CAUTION!

To change the password policy settings for an Application Server on the domain, the station must first be taken off the domain, added to the Workgroup, then restarted.

Once the original password and account lockout policies are recorded, you can disable them. Normally, this would be done by having a site's LDAP administrator change the policy in the AD LDS database. If this cannot be done, and if the site allows it, the following procedure can be used as a workaround.

To disable the password and account lockout policies

1. Open the Windows Administrative Tools and select **Local Security Settings**.
2. In the navigation pane, expand **Account Policies** and select **Password Policy**.

3. To modify the Password Policy information, double-click the policy to be changed.
Change each password policy to have the following settings:

| Password policy | Setting |
|--|----------|
| Enforce password history | 0 |
| Maximum password age | 0 |
| Minimum password age | 0 |
| Minimum password length | 0 |
| Password must meet complexity requirements | Disabled |
| Store password using reversible encryption for all users in the domain | Disabled |

4. Under Account Policies, click **Account Lockout Policy**.
5. To modify the Account Lockout Policy information, double-click **Account lockout threshold**.
6. Set its value to **0** and click **OK**.
This automatically changes the other values to Not Applicable.
7. To close Local Security Settings, select **File > Exit**.

2. Backing up the ADAM schema

(Topic number: 6717)

On systems running Windows Server 2003, all IMPAX user information is stored in the ADAM schema. Backing up the ADAM schema at this time is important in the event that user migration fails. Once created, the scheduled backup job runs at set intervals and creates a backup copy of the selected data. The backups can be saved to tape, CD, DVD, or a network location.

To back up the ADAM schema

1. Select **Start > All Programs > Accessories > System Tools > Backup**.
2. Select **Tools > Options**.
3. Switch to the **Exclude Files** tab.
4. In the list of file names, select **C:\Program Files\Microsoft ADAM** and click **Remove**. Click **OK**.
5. When the Backup or Restore Wizard displays, clear the **Always start in Wizard mode** checkbox and click **Advanced Mode**.
6. On the Welcome screen, click **Backup Wizard**.
7. On the Backup Wizard screen, click **Next**.
8. On the What to Backup screen, select **Backup selected files, drives, or network data**. Click **Next**.

9. On the Items to Backup screen, select the folder containing the ADAM data as well as the **World Wide Web Publishing Service** folder. Click **Next**.

The default location for the ADAM database is C:\Program Files\Microsoft ADAM\AgfaHealthcare.

10. If backing up to a tape drive, under Backup media type, select the tape drive, and in the backup media area, click **New media**. Click **Next**.

or

If backing up to any other media type, select the location where the backup is to be saved, and type a name for the backup. Click **Next**.


11. On the Completing the Backup Wizard screen, click **Advanced**.
12. On the Type of Backup screen, select **Normal**. Click **Next**.
13. On the How to Backup screen, select **Verify data after backup and Use hardware compression if available**. Click **Next**.
14. On the Backup Options screen, select **Replace the existing backups**. Click **Next**.
15. On the When to Backup screen, select **Now**. Click **Finish**.
16. In the Backup Progress dialog, click **Close**.
17. Close the Backup Utility.

3. Setting up custom roles

(Topic number: 6624)

After assessing the default role hierarchy for IMPAX, you may find that none of the default roles contain the needed set of permissions. In this case, you can either modify the preferences for the closest applicable role, or create additional, custom roles. For more information on defining roles, refer to the “Defining roles” section (topic number 9421) of the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

To set up custom roles

1. Log into the IMPAX 6.5.3 Client.
2. From the Configure area drawer menu , select **Users and Roles**.
3. To add a role within a role, in the navigation pane, right-click the role and select **Add Role**.

or

To add a role at the top level of the role hierarchy, right-click in the navigation pane below the defined roles and select **Add Roles**.

4. Rename the new role.

The changes are saved automatically when you change context (that is, when you perform another action, such as selecting a different option or logging out).

5. Repeat for any other roles to create.

The next task is to define what IMPAX or WEB1000 privileges this new role inherits.

4. Mapping IMPAX or WEB1000 privileges to custom roles

(Topic number: 6662)

If custom roles have been created, then any appropriate IMPAX Client or WEB1000 privileges must be mapped to these custom roles.

To map IMPAX or WEB1000 privileges to custom roles

1. In the UserMigration folder where the Migration Tools are installed, locate and open the configuration file called **migrate-users.exe.config**.

The migrate-users.exe.config file is an xml file. In this file is a section that looks like the following:

```
<RoleMapping>
  <roles>
    <map privilege_level="ADMIN" role="IT" dn="cn=Administration" />
    <map privilege_level="CARDIO" role="Cardiologist" dn="cn=Cardiology" />
    <map privilege_level="CARDIAC ADMIN" role="Cardiologist" dn="cn=Cardiology" />
    <map privilege_level="CLERICAL" role="Clerical" dn="cn=Administration" />
    <map privilege_level="CLINICIAN" role="Emergency Department" dn="cn=Clinician" />
    <map privilege_level="MAMMO" role="Breast Imaging Radiologist" dn="cn=Radiology" />
    <map privilege_level="MG RADIOLOGIST" role="Breast Imaging Radiologist" dn="cn=Radiology" />
    <map privilege_level="ORTHO" role="Orthopaedic Surgeon" dn="cn=Surgey" />
    <map privilege_level="POWER RAD" role="Power Radiologist" dn="cn=Radiology" />
    <map privilege_level="PREPACS" role="Radiologist" dn="cn=Radiology" />
    <map privilege_level="RADIOLOGIST" role="Radiologist" dn="cn=Radiology" />
    <map privilege_level="SERVICE" role="Service" dn="cn=Administration" />
    <map privilege_level="SYSTEM ADMIN" role="System Administrator" dn="cn=Administration" />
    <map privilege_level="TECH" role="Technologist" dn="cn=Radiology" />
    <map privilege_level="TRAINEE" role="Resident" dn="cn=Radiology" />
    <default privilege_level="DEFAULT" role="Clerical" dn="cn=Administration" />
  </roles>
</RoleMapping>
```


2. Compare the privileges in the database with the role mapping in the migrate-users.exe.config file.
3. To map an IMPAX or WEB1000 privilege to a custom IMPAX 6.5.3 role, add additional map entries.

For example, to map a user with RADIOLOGIST privileges to a custom role called Pediatric Radiologist in IMPAX 6.5.3, add the following line before the *default_privileges_level* line:

```
<map privilege_level="RADIOLOGIST"  
role="Pediatric Radiologist" dn="cn=Radiology" />
```

4. Save the file.

A detailed comparison of operations and access controls in IMPAX 6.5.3 and privileges and components in IMPAX 5.2 or 5.3 is available in the “Privilege and permission comparison” section (topic number 54910) of the *IMPAX Migrations Reference Guide*. Most of this information also applies to IMPAX 4.5.

5. Converting both IMPAX and WEB1000 user information to LDF

(Topic number: 6700)

When using the migrate-users tool in the xml2ldf mode, and processing both IMPAX and WEB1000 users, the following rules apply:

1. An IMPAX user is exported to the .ldf file with all exported preferences that are to be migrated to IMPAX 6.5.3.
2. A WEB1000 user with no corresponding IMPAX userid is exported to the .ldf file, but only the privilege level is migrated to the IMPAX 6.5.3 role; WEB1000 preferences and team information is not migrated.
3. Any user with a matching user name but different userid will have a number appended to the user name, because LDAP requires user names to be unique.
4. Any WEB1000 user with a matching userid and password in IMPAX is assumed to be the same user, so the WEB1000 user is discarded and the IMPAX profile is used.
5. Any WEB1000 user with the same userid but different password is possibly a different user, so the WEB1000 userid has a suffix appended, and is written to a different .ldf file (conflicts.ldf). This file must be imported separately with ldifde.exe if these additional users are to be migrated.

6. Converting the user data to LDF

(Topic number: 6719)

In IMPAX 6.5.3, user authentication, user preferences, and user permissions are stored in an AD LDS database or an external LDAP. Before the user data can be migrated from the IMPAX or WEB1000 MVF database into the AD LDS database, the exported MVF data must first be converted

into XML (as described in *Exporting user data* (refer to page 87)), then transformed into LDF (Layered Data Format).

Perform this task on the configured IMPAX 6.5.3 Application Server.

To convert the user data to LDF

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. To convert **only** IMPAX 4.5, 5.2, or 5.3 user information, type

```
migrate-users.exe -m xml2ldf -I users.xml -d mvf_version_number -U  
IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password
```

or

To convert **only** WEB1000 user information, type

```
migrate-users.exe -m xml2ldf -I webusers.xml -d mvf_web -U MVF_database_user -P  
MVF_database_password
```

or

To export **both** IMPAX and WEB1000 user information at once, type

```
migrate-users.exe -m xml2ldf -I users.xml,webusers.xml -d mvf_version_number -U  
IMPAX_4.5_5.2_or_5.3_database_user -P IMPAX_4.5_5.2_or_5.3_database_password
```

In this last case, because the data has already been exported and converted to XML, there is no need to refer back to **both** the WEB1000 and IMPAX databases. The command can be run with the IMPAX database parameters only, but will still be applied to both the IMPAX and the WEB1000 data, as specified by the -I parameter.

When exporting both IMPAX and WEB1000 user information, two files may be produced: *users.ldf* and *conflict.ldf*. The *conflict.ldf* file lists any IMPAX and WEB1000 users that have the same user ID but different passwords.

Other parameters supported by this tool are listed in *migrate-users.exe* (refer to page 114).

7. Migrating user data to AD LDS

(Topic number: 6656)

The next step is to migrate the exported user data into AD LDS, if the site has opted for the Windows Server 2008 R2 SP1 operating system. If a *conflict.ldf* file has been produced by exporting both IMPAX and WEB1000 users, examine the file. For each user ID listed, determine if it represents:

A) One individual who uses the same ID but a different password in each application.

or

B) Two different individuals.

In case A), you do not have to do anything more with these IDs. In case B), you should migrate those users into AD LDS. If the file contains a mix of A) and B) user IDs, delete the duplicate instance of the A) types.

To successfully migrate user data into AD LDS, the user currently logged into the IMPAX 6.5.3 Application Server component must have AD LDS administrative rights. (To check, launch AD LDS Edit and select **Role > member**. The logged-in user must belong to the Administrator group.)

To migrate user data to AD LDS

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. Type

```
ldifde -i -s fully_qualified_domain_name_of_ADAM_host -f LDF_input_file -t 636
```

where the *LDF_input_file* is the users.ldf file produced by running the migrate-users.exe command.



Tip:

To ignore the existing users, add the -k parameter to the ldifde command.

4. If you have a conflict.ldf file that contains user IDs representing unique individuals, run the ldifde command again and use that conflict.ldf file as the *LDF_input_file*.



Note:

If the user migration fails with *ORA-1000 error (number of open cursors exceeded)*, edit the **/usr/oracle/current/dbs/initMVF.ora** (Solaris) or the **c:\oracle\product\11.2.0\dbs\initMVF.ora** (Windows) file by changing the current open_cursors value to a much larger value. If the problem persists, contact Agfa Professional Services.

8. Creating a one-time backup of AD LDS

(Topic number: 113662)

On Application Servers running Windows Server 2008, all IMPAX user information is stored in the AD LDS schema.

Once all user data has been migrated to the AD LDS database, we recommend backing up the AD LDS database.

To create a one-time backup of AD LDS

1. To open an elevated command prompt, click **Start**, right-click **Command Prompt**, and select **Run as administrator**.
2. At the command prompt, type
dsdbutil

3. At the dsdbutil prompt, type
activate instance AgfaHealthcare
4. At the dsdbutil prompt, type
ifm
5. At the ifm prompt, type
create full *location*
where *location* is the path to the folder where you want the installation media to be created.
You can save the installation media to a network shared folder or to any other type of removable media.
For example:
ifm: create full C:\Backup\AgfaHealthcare
6. At the ifm prompt, type
quit
7. At the dsdbutil prompt, type
quit

The AD LDS instance is backed up.

9. Updating AD LDS passwords

(Topic number: 6715)

To successfully update AD LDS passwords, ensure that the password policy has been modified as described in *Recording and disabling the password and account lockout policies* (refer to page 92).

To update AD LDS passwords

1. On the Application Server, open a command prompt.
2. Change to the **C:\mvf-mig6\UserMigration** directory.
3. Type
migrate-users.exe -m postimport -d mvf_*version_number* -U mvf -P mvf
or, for WEB1000-only sites:
migrate-users.exe -m postimport -d mvf_web -U mvf -P mvf

10. Adjusting default toolbars, screen formats, and window level presets

(Topic number: 6732)

You can now customize the toolbars, screen formats, and window level presets used in the IMPAX 6.5.3 Client as required for specific roles and users. For instructions, refer to the *IMPAX 6.5.3 Client Knowledge Base: Extended* topics listed in the table that follows.

| Task | Corresponding Knowledge Base topic |
|-----------------------------------|---|
| Adjusting top toolbar buttons | Customizing the top toolbar buttons (topic number 8734) |
| Adjusting context toolbar buttons | Defining which buttons are in the context toolbar (topic number 8735) |
| Adjusting screen format | Changing study screen format (topic number 8790) |
| Adjusting window level presets | Configuring window level presets (topic number 8562) |

And for more information on default toolbars, screen formats, and window level presets, refer to the “Role defaults” (topic number 54969) section of the *IMPAX 6.5.3 Client Knowledge Base: Extended*.

Preparing the IMPAX database and archive for the upgrade

You must perform certain tests and backup tasks to prepare the IMPAX 5.2 or 5.3 Database and Archive Servers for the upgrade. IMPAX 4.5 sites cannot upgrade directly to IMPAX 6.5.3; they must first upgrade to IMPAX 5.2, then update the study comments (refer to page 102), then perform the other tests and backup tasks.

If migrating a WEB1000 site, no particular WEB1000 Server tasks are required.

1. Updating study comments after upgrading to IMPAX 5.2 from IMPAX 4.5

(Topic number: 10040)



CAUTION!

This topic applies **only** when upgrading from IMPAX 4.5. This query must **not** be run if upgrading from IMPAX 5.2 or 5.3; doing so would overwrite database data.

This query works with both SQL and Oracle databases.

You cannot upgrade an IMPAX 4.5 database directly to IMPAX 6.5.3; you must first upgrade it to IMPAX 5.2.

After upgrading the IMPAX 4.5 database to IMPAX 5.2, we recommend that you run the following command to update the study comments field in the database. If you do not, the upgrade time from IMPAX 5.2 to IMPAX 6.5.3 greatly increases.

To update study comments after upgrading to IMPAX 5.2 from IMPAX 4.5

1. Launch CLUI.

2. Type

Update DOSR_STUDY set study_comments_utf8=study_comments where study_comments is not null

The study comments in the database are updated, reducing the amount of time required to later upgrade this database to IMPAX 6.5.3.

2. Running a final report on study archiving status

(Topic number: 6631)

While you may have already run a report on study archiving status (*Running an initial report on study archiving status* (refer to page 77)), you can do so again closer to the actual time of migration, to ensure that you have the most up-to-date list of unarchived studies.

Run the following command on any computer with an MVF connection to the IMPAX 5.2 or 5.3 database.

To run a final report on study archiving status

1. At a command prompt, type

mig-study-archive-report.exe -U IMPAX_5.2_or_5.3_database_user -P IMPAX_5.2_or_5.3_database_password -d mvf_version_number -o

where *version_number* is either 52 or 53.

This command returns a list of completely unarchived studies, partially unarchived studies, and studies cached on disabled archive, and writes them to a file that CLUI can use to initiate store jobs. To get different information returned, you can use different parameters, as outlined in *Common parameters in Migration Tool commands* (refer to page 110), *mig-study-archive-report.exe* (refer to page 115), and *mig-study-archive-report*.

Information on how to archive the remaining unarchived studies is provided in the *AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

3. Checking the size of the map_event and map_event_audit tables

(Topic number: 10773)

To save time in database migration, large map_event and map_event_audit tables should be trimmed.

To check the size of the map_event and map_event_audit tables

1. On Windows, open the SQL Server Query Analyzer.

- On Solaris, launch CLUI.
2. Type **select count(*) from map_event**.
 3. On Windows, click **Execute**.
 4. Type **select count(*) from map_event_audit**.
 5. On Windows, click **Execute**.



Note:

The **count(*)** command returns a result with five decimal places.

If the tables are large (they could run to millions of records), you can optionally first export the data to file by following the “Exporting auditing information to a file” procedure (topic number 9342) in the *IMPAX Server Knowledge Base*. You can then trim the records by following other procedures documented in the *IMPAX Server Knowledge Base*; notably, the “Defining when older audit records are deleted from the database” topic (topic number 9345).

4. Verifying whether the database needs updates for report migration

(Topic number: 60430)

IMPAX 6.5.3 is able to store reports with links to multiple patient identifiers. These patient identifiers come from Connectivity Manager, but are stored differently in IMPAX than in Connectivity Manager. The `domain_id` in `AgfaHC_Patient_ID` is the same field as the Connectivity Manager field `issuer_of_patient_id`. IMPAX requires that the combination of the `patient_id` and `domain_id` be distinct values in `AgfaHC_Patient_ID`.

To support this, the Connectivity Manager `issuer_of_patient_id` file must be different for the Primary, Alternate, and Global patient identifiers. This may require updates to the Connectivity Manager database and mappings and to the `AgfaHC_patient_id` table.

Changes to these fields are most easily done before the report data migration. These changes prevent the Application Server from hanging after receiving new reports for inserting into the `AgfaHC` tables.

To verify whether the database needs updates for report migration

1. On the Connectivity Manager, in Query Analyzer, run the following queries:
 - a. **use mcf**
 - b. **select distinct use_of_patient_id from mcf_patient_id**
 - c. **select distinct issuer_of_patient_id from mcf_patient_id**
2. If either of these queries gets more than one response, this may indicate a problem. To resolve it, work with the Connectivity Manager integrator and Agfa support.

It is much easier to resolve any data issues **before** migrating reports to IMPAX.

5. Identifying the report source

(Topic number: 68030)

When upgrading the database, you will be prompted for the report source. When prompted, supply the value stored in the `requesting_service` field in the Connectivity Manager database. To prepare for the upgrade, identify this value in advance.

To identify the report source

1. On the Connectivity Manager, open `osql` (refer to page 123) and type
use mcf;
select distinct requesting_service from mcf_service_request;
2. To prepare for upgrading the database, note the value stored in the `requesting_service` field.
The `requesting_service` value is case-sensitive.
3. If multiple values are returned in the `requesting_service` field, consult a Connectivity Manager integrator, as data and mappings may need to be updated.
If this Connectivity Manager receives data from multiple report sources, separate `requesting_service` values may exist that match each report source.

6. Backing up the SQL 2000 database

(Topic number: 11497)

In case of problems, back up the database before upgrading it.



Note:

Before backing up the database, confirm that you have stopped the IMPAX services, emptied and halted all queues, and shut the database down.

To back up the SQL 2000 database

1. On the server running the AS300 database, select **Start > All Programs > Microsoft SQL Server > Enterprise Manager**.
2. In the Explorer window of the Enterprise Manager, expand **Console Root > Microsoft SQL Servers > SQL Server Group > server > Databases > MVF**
where *server* is the name of the SQL Server IMPAX is running under.
3. Select **Action > All Tasks > Backup database**.
4. In the SQL Server Backup screen, in the Backup section, select **Database—complete**.
5. Click **Add** and specify the directory to back up to.

6. To start the backup, click **OK**.
7. Exit the SQL Server Enterprise Manager.

7. Saving the map_event_audit tables from an AS300 SQL Server database

(Topic number: 106543)

When upgrading an IMPAX AS300 system running SQL Server, follow this procedure.

To save the map_event_audit tables from an AS300 SQL Server database

1. Start the SQL Server Query Analyzer and log in as the **sa** user.
2. From the drop-down database list in the top toolbar, select **mvf**.
3. In Query Analyzer, type
sp_spaceused MAP_EVENT_AUDIT
4. Click **Execute a query.** ►
5. Note the *reserved size* value returned by the previous command.

This value is the space required to export the data. If the amount of available disk space is not sufficient for the exported data, free up some disk space.

6. Open a command prompt.
7. To save the map_event_audit tables, type

```
bcp mvf..map_event_audit out location_you_selected \MAP_EVENT_AUDIT.txt -U sa -P  
sa_password -c
```

where

- ***location_you_selected*** is the drive and directory with enough disk space to save the map_event_audit data; for example, `e:\MSQL\BACKUP`.
- ***sa_password*** is the password obtained by opening a command prompt, changing to the `C:\mvf\bin` directory, and executing **passkey -M QUERY -u sa**.

8. Close the command prompt.
9. In the Query Analyzer, to truncate the map_event_audit table, type
truncate table map_event_audit
10. Click **Execute a query.** ►

8. Backing up critical AS300 server files

(Topic number: 147687)

Prior to a forklift upgrade of an IMPAX AS300 Network Gateway, Archive Server, or Curator, any critical files should be backed up to an appropriate location. During the upgrade itself, the files on the new server can be compared with that of the old server.

9. Detecting and correcting IMPAX cache corruption

(Topic number: 6710)

The Cache Check and Repair Tools are used to identify missing cache files and to repair or remove damaged ones. These tools are normally run across all of the cache file systems on the affected server, because files missing from a damaged cache can sometimes be found on another cache. Performance of the tools is hardware-dependent.

For Windows servers, the `mvfcachecheck-version` executable can be found on the IMPAX 6.5.3 AS300 Server DVD or ISO file in the `programs/mvf` folder.

Checking the integrity and identity of cache files

(Topic number: 58348)

You can use the cache check and repair tools to check the integrity and identity of cache files against the IMPAX database.

To check the integrity and identity of cache files

1. In a command prompt, change to the location of the cache check and repair tools.
2. Run **`mvf-check-cache parameters path_to_cache`**

where *parameters* can be one or more of the following:

- **`-i seconds`**—Interval between display of progress messages. Default is every 10 seconds.
- **`-g`**—Gentle cache check. Causes the tool to sleep every other second (and take twice as long).
- **`-m mv_command_file`**—Path to the script of the `mv` commands which move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.
- **`-q`**—A quick check of file existence only, and a simple file size sanity check. Cannot be used with the `-m` parameter.

For example:

mvf-check-cache -q d:\cache (Windows)

A report and additional diagnostic messages are written to the log file.



Note:

If the cluster has only one local cache, you can invoke the tool without arguments. If the cluster has multiple caches, you must specify the path to the cache on the command line. If a cache is not specified and multiple caches exist, the tool lists the cache paths and exits. Cache files that do not have locations registered in the database are not detected.

Finding files in a cache directory that are unknown to the database

(Topic number: 58351)

Files in the cache directory that contain invalid file name formats or are not registered in the database must be identified and possibly moved to another location.

To find files in a cache directory that are unknown to the database

1. Run **mvf-clean-cache** *parameters path_to_cache*

where *parameters* can be one or more of the following:

- **-i seconds**—Interval between display of progress messages on stderr. Default is every 10 seconds.
- **-g**—Gentle cache check. Causes the tool to sleep every other second (and take twice as long).
- **-m mv_command_file**—Path to the script of the mv commands that move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.
- **-v**—Increased verbosity. Causes all progress and report messages to be prefixed with the current date and time.

A report and additional diagnostic messages are written to the log file.

For example:

mvf-clean-cache.exe -m move_cmds.bat D:\cache1 (Windows)

Moving the images from a cache directory

(Topic number: 58354)

You can move the images identified by the *mv_command_file*, which moves problem files.

To move the images from a cache directory

1. Run the *mv_command_file*.

For example:

move_cmds.sh (Solaris)

move_cmds.bat (Windows)

Generating a report of lost images

(Topic number: 58357)

This procedure is designed to be run on a server that has suffered damage to one or more cache file systems. This procedure generates a report of studies that contain DICOM object files that have been lost from a server's cache and deregisters the missing files from the database.

To generate a report of lost images

1. Run **mvf-report-loss** *parameters* *report_file_name*

where *parameters* can be one or more of the following:

- **-i seconds**—Interval between display of progress messages on stderr. Default is every 10 seconds.
- **-g**—Gentle cache check. Causes tool to sleep every other second (and take twice as long).
- **-r**—Run in deregister mode, changing the visible field values from **C** to **F** and permanently deleting all database locations for missing files. This action cannot be undone. It has no effect if the tool has never been run in marking mode.



Note:

If you omit the **-r** parameter, the tool runs in marking mode and checks all of the caches on the local server. If a file is missing, the visible field on the `osr_location` table is set to **C**, effectively making the file location invisible. If a tool is rerun and files have since been restored to cache, the visible field values are set back to **T**. This is a default mode.

For example:

mvf-report-loss **loss-report.txt**

IMPAX system consistency is restored by deregistering missing cache files from the database.

Migration Tools commands and parameters

A

The IMPAX 6.5.3 Migration Toolbox relies on parameters to configure the command line applications to suit a particular migration instance. While many of the parameters are common to all of the Migration Tools, some parameters are specific to Windows or Solaris migrations.

Common parameters in Migration Tool commands

(Topic number: 6720)

These command-line parameters are common to most of the executables in the IMPAX 6.5.3 Migration Toolbox.

| Parameters | Values | Additional information |
|------------|--|--|
| -d | <i>database_name</i> | DNS name for ODBC connection. Required for the migration_inventory.exe (refer to page 115) and migration_inventory tool. |
| -e | <i>entity_name</i> | |
| -f | <i>log_file</i> | Log file name. Differs somewhat for migrate-users.exe (refer to page 114). |
| -l | {debug info error audit service noservice} | Logging level. Differs for database-upgrade-script.bat (refer to page 112) and database-upgrade-script. |
| -p | <i>process_title</i> | Differs for mig_reporter.exe (refer to page 113) and mig-reporter. |
| -P | <i>database_password</i> | |

| Parameters | Values | Additional information |
|------------|---------------------------------------|--|
| -R | <i>database_reconnection_attempts</i> | |
| -s | None | Output to stdout. Differs for migration_inventory.exe (refer to page 115) and migration_inventory. |
| -U | <i>database_user</i> | |
| -? | None | Usage/help screen |

Windows Migration Tools and parameters

(Topic number: 6605)

Some of the migration tools and parameters are specific to Windows (AS300) migrations.

block_named_pipes.exe

(Topic number: 10609)

Removes the registry entry that allows Named Pipe access to the SQL Server. No longer required for migrations.

build-impax-mig-schema.bat

(Topic number: 10611)

Installs Migration Tools database schema and data which the Migration Tools use during the preparing to upgrade phase.

SQL Server databases

For a SQL Server database, on a computer supporting user ID *sa*, password *sa*, and ODBC name *mvf*, the batch file can be run directly. Otherwise, you must specify the mvf user, mvf password, ODBC name, in that order.

Examples:

```
build-impax-mig-schema.bat sa pwd new
```

Runs the command for user *sa*, password *pwd*, and ODBC name *new*.

```
build-impax-mig-schema.bat
```

Runs the command for user *sa*, password *sa*, and ODBC name *mvf*. These default values do not have to be specifically included; however, if problems occur in running this script, specifying these values may solve the problem.

Oracle databases

For an Oracle database, run the script with no additional parameters.

database-upgrade-script.bat

(Topic number: 10613)

Upgrades the IMPAX 5.2 or later SQL Server database schema to IMPAX 6.5.3. This is a batch file that the user runs, which calls the executable file that handles the main part of the database upgrade.

The database-upgrade-script requires a report source. Reports are retrieved from IMPAX clusters based on matches between the report source and the value of the dosr_study table's requesting_service field, which is set by the Connectivity Manager's requesting_service field during HIS verification. Check the Connectivity Manager for the value of the requesting_service field. This field is case-sensitive.

To check the value of the Connectivity Manager's requesting_service field

1. On the Connectivity Manager, open osql (refer to page 123) and type
use mcf;
select distinct requesting_service from mcf_service_request;



Note:

If this Connectivity Manager receives data from multiple report sources, several requesting_service values may match each report source. If multiple values are returned, consult a Connectivity Manager integrator, as data and mappings may need to be updated.

| Parameters | Values | Default value |
|------------|--|------------------|
| -l | <i>dump_file_location_for_MAP_EVENT_and_MAP_EVENT_AUDIT</i> | C:\mvf-mig6\data |
| -x | <i>path_to_IMPAX_installation_directory</i> | C:\mvf |
| -a | None; runs the command in audit mode, which means that it tests the upgrade script without actually upgrading the database. No longer recommended for use. | Not applicable |
| -v | {52 53 62 63 64 65}; refers to the version being upgraded from. If upgrading from IMPAX 6.5.x, the version parameter can be omitted. | Not applicable |

Examples:

```
database-upgrade-script.bat -v 62
```

Migrate the database from IMPAX 6.2 to IMPAX 6.5.3.

get_station_mapping.exe

(Topic number: 10615)

Not applicable to IMPAX 6.2 or later migrations. Extracts station configuration from the database and creates a mapping of the Client machine name to the AD LDS station ID.

| Parameters | Values | Default value |
|------------|--------------|---------------|
| -m | {list add} | add |

MigrateTRServer.exe

(Topic number: 10617)

Utility that migrates worklist or report data or both from the training or traveling server to the production server. This is not a command-line utility; it has a user interface.

When using the MigrateTRServer utility to migrate Connectivity Manager report data from the IMPAX 5.2 or 5.3 traveling server to the production server, ensure the following:

- Before migrating reports between IMPAX servers, stop the appropriate Connectivity Manager RIS inbound interfaces or outbound report queues to IMPAX.
- Connectivity Manager should be configured to use the migrated IMPAX 6.5.3 server name when the queues are stopped. Any reports in Connectivity Manager report queues fail to store to IMPAX 6.5.3 if they are in the queue with the incorrect server name.
- Do not send live reports into the IMPAX 6.5.3 production system until the report migration from the traveling server to the production server is complete. This utility overwrites all reports.
- This utility requires .NET in order to run. Run the utility from the IMPAX 6.5.3 Application Server, where .NET is installed.

mig_reporter.exe

(Topic number: 10619)

Generates a progress report of long-running tasks as well as the final report output from each tool to a file or directly to the screen. This is an optional helper utility.

| Parameters | Values | Default value |
|------------|--|----------------|
| -h | <i>host_name</i> | None |
| -t | <i>Migration_Tool_name</i> | None |
| -r | <i>information_type</i> | None |
| -p | None; deletes prior entries | Not applicable |
| -v | None; verbose mode | Not applicable |
| -c | None; output to screen instead of to reports directory | Not applicable |

Example:

```
mig_reporter.exe -d mvf_52 -t system_inventory_tool
```

This command writes the output of the system inventory command to a report file.

migrate-users.exe

(Topic number: 10621)

Not required for IMPAX 6.2 or later migrations. Exports user IDs, preferences, and privileges and migrates this data from MVF to AD LDS when migrating to the Windows Server 2008 R2 platform. Also exports Select wizards and other information that will not be migrated to IMPAX 6.5.3.

| Parameters | Values | Default value |
|--------------|--|--|
| -m | {mvf2xml xml2ldf postimport} where: <ul style="list-style-type: none"> mvf2xml—Read MVF and output in XML intermediate format xml2ldf—Transform XML format to importable .ldf file postimport—Update LDAP passwords and MVF data | None |
| -f | <i>output_file</i> | Defaults are users.xml when mode is mvf2xml and exporting IMPAX users, webusers.xml when mode is mvf2xml and exporting WEB1000 users, and users.ldf when mode is xml2ldf. |
| -c | <i>output_file_for_conflicting_users</i> | conflicts.ldf (xml2ldf mode) |
| -ud | <i>MVF_user_database_name_for_IMPAX_or_WEB1000</i> —DSN name for ODBC connection | Default uses connection specified by -d -U -P parameters. |
| -uU | <i>WEB1000_or_second_IMPAX_database_user</i> | None |
| -uP | <i>WEB1000_or_second_IMPAX_database_password</i> | None |
| -I | <i>file_name</i> —Comma-separated list. Specifies input file name or names for xml2ldf mode. | None |
| -uid | <i>userid_list</i> —Comma-separated list of user IDs to be exported | None |
| -node | <i>node_type</i> —Optional component node type from configuration to restrict what is being migrated. For example, “-node user” ensures that only components with a node type of “user” are executed. | None |

Examples:

- To extract all user data from IMPAX to default XML file (users.xml):
-m mvf2xml -d myDB -U myDBUser -P myDBPass

- To extract user data for user1 and user2 from IMPAX to default XML file (users.xml):
-m mvf2xml -d myDB -U myDBUser -P myDBPass -uid user1,user2
- To extract all user data from WEB1000 to default XML file (webusers.xml):
-m mvf2xml -d myDB -U myDBUser -P myDBPass -ud myWebDB -uU myWebDBUser -uP myWebDBPass
- To transform all user data from IMPAX and WEB1000 XML files to default importable LDF file (users.ldf):
-m xml2ldf -I users.xml,webusers.xml -d myDB -U myDBUser -P myDBPass
- To perform a post-import update of all AD LDS passwords and IMPAX data:
-m postimport -d myDB -U myDBUser -P myDBPass

migration_inventory.exe

(Topic number: 10623)

Collects key IMPAX Server and Client information stored in database; for example, number of studies, number of objects, number of sources, and so on. Generally used only for upgrades from IMPAX 5.2 or 5.3.

| Parameters | Values | Default value |
|------------|--|----------------|
| -a | None; generates all reports | Not applicable |
| -s | None; generates system snapshot | Not applicable |
| -c | None; generates cluster summary for client and server machines | Not applicable |

Example:

```
migration_inventory.exe -d mvf_52 -U sa -P -sa -c -D 52_server
```

Produces a full cluster summary of client and server machines connected to the specified database.

mig-study-archive-report.exe

(Topic number: 10627)

Checks the archive status of studies in the system.

| Parameters | Values | Default value |
|------------|--|----------------|
| -c | None; include listing for completely unarchived studies | Not applicable |
| -D | None; treat disabled archive or cache as active. Query only; will not enable the archive or cache. Overrides -z. | Not applicable |
| -n | number —Specifies the maximum number of studies to return. To return all, specify 0. | 100 |

| Parameters | Values | Default value |
|------------|--|----------------|
| -o | None; output unarchived studies to a file which may be used by CLUI to initiate a store job. The file is not created by default. | Not applicable |
| -x | <i>separator</i> —Item separator for report data | bar () |
| -y | None; include listing for partially archived studies | Not applicable |
| -z | None; include studies cached only on a disabled AE | Not applicable |

Example:

```
mig-study-archive-report.exe -d mvf_52 -U sa -P sa -o
```

Returns a list of completely unarchived studies, partially unarchived studies, and studies cached on a disabled AE, then writes them to a file that CLUI can use to initiate store jobs

run_psexec.bat / psexec.exe

(Topic number: 10625)

Extracts station configuration from the database and creates a mapping of the Client machine name to the AD LDS station ID. Record this for each of the hosts on the host_list input file by downloading get_station_mapping.exe to each of the machines and running the application locally.

user_base_summary.exe

(Topic number: 10629)

Creates a summary of users and privileges in the IMPAX 4.5, 5.2, or 5.3 system. Cannot be used for IMPAX 6.2 or later. Cannot be used to capture a summary in IMPAX 6.5.3.

PMTS scripts overview

B

The following table shows an overview of the PMTS scripts included in the IMPAX DAA package.

| PMTS script names | Function |
|---|--|
| migrate-mi-server-database and migrate-it-ws-database | Upgrades schema from IMPAX 4.5 to 5.2. |
| mvf-remove-caches (bash script) | Removes image cache and cached locations from the database. |
| mvf-remove-web-caches (bash script) | Removes web cache and cached locations from the database. |
| mvf-remove-archive | Removes archive and archive locations from the IMPAX 6.x database. |
| mvf-remove-archive-pre6 | Removes archive and archive locations from the IMPAX 4.5 and 5.2 database. |
| mvf-offline-vols (bash script) | Sets DAA Library volumes as OFFLINE. |
| convert-to-remote-archive | Converts DAA entries to PACS Store and Remember entries. |

IMPAX 5.2 preferences migrated to IMPAX 6.5.3

C

| User preferences | Migrated? | Details |
|-------------------------------------|-----------|--|
| List area | | |
| User Keywords | Yes | The keywords created to drive workflows continue to be used in IMPAX 6.5.3. |
| Worklists | No | The worklist architecture changed significantly. Standard worklists are used in IMPAX 6.5.3. |
| Scripts (Select wizards) | No | The Select Wizard is no longer available in IMPAX 6.5.3. This functionality has been replaced by standard worklists. |
| Columns | No | IMPAX 6.5.3 supports worklist-specific columns set up during the creation of a standard worklist. |
| Ronds | No | The IMPAX 5.2 Ronds information is not compatible with IMPAX 6.5.3. Use the scheduled worklists along with the Snapshot tool to create Ronds in IMPAX 6.5.3. |
| Configure area - Preferences | | |
| Default Printers and Print Presets | Yes | The printer configurations are compatible with IMPAX 6.5.3. |
| Relevancy rules | Yes | The storage of Relevancy rules information has moved from IMPAX 5.2 database to the IMPAX 6.5.3 ADAM database. |
| Composite Layouts | Yes | WYSIWYG print templates have been renamed to Composite Print Layouts. |

| User preferences | Migrated? | Details |
|--|-----------|--|
| Patient name format (single-byte, phonetic, and so on) | No | The implementation of patient name has changed. IMPAX 6.5.3 can provide single-byte, phonetic, and ideographic versions of patient names. |
| Search Locations | No | Cannot migrate this user setting to an IMPAX 6.5.3 role. Search locations are set and configured within the Configure > Preferences area. |
| Transmit Locations | No | This user setting cannot be migrated to an IMPAX 6.5.3 role. In IMPAX 6.5.3, Transmit Locations are set and configured within the Configure > Preferences area. |
| Worklists - Study Arrival | No | The worklist architecture changed significantly in IMPAX 6.0.2. The studies added to the worklist are controlled by settings in the Configure > Preferences section and by Worklist settings in the Image area > Customize dialog. |
| Worklists - Audible Notification | No | In IMPAX 6.5.3 the Audible Notification operator is enabled by selecting Audible Notification from the User ID menu found on the List or Configure area bar. |
| Reporting method - Analog, TalkStation, Serial | No | Reporting methods are set in Configure area - Preferences, Text area bar, Reporting tab. |
| Configure area - Users and Roles | | |
| User information (user ID, password, long name, description) | Yes | IMPAX 5.2 user information can be migrated to the IMPAX 6.5.3 ADAM database, including IMPAX passwords and user names. |
| User and license assignment | Yes | IMPAX 6.5.3 uses a role-based access control model. The migration process moves users from IMPAX 5.2 privilege levels to IMPAX 6.5.3 roles. |
| User mapping (to enterprise LDAP servers) | No | User and Group mappings are new features in IMPAX 6.5.3. They define how the users are authenticated in the cluster and what roles they are associated with. |
| Permissions | No | The default permissions for IMPAX 6.5.3 are based on roles. They can be customized prior to the migration if necessary. The user information for IMPAX 5.2 is not compatible with this model. |
| Configure area - Printers | | |
| Printer information (type, AE title, hostname) | Yes | Printer information functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Film sizes | Yes | Film sizes are consistent between IMPAX 5.2 and IMPAX 6.5.3. |

| User preferences | Migrated? | Details |
|--|-----------|--|
| Formats | Yes | Formats are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| LUTs | Yes | LUTs are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Image area | | |
| Comparative Review Sequences | Yes | Comparative review sequences functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. New sequences have been added, however. |
| Wizards | Yes | Operations such as DELETE and EDIT apply only to user-defined wizards and not those inherited from a role. |
| Hanging Protocols | Yes | Hanging protocol functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Series Descriptions | Yes | IMPAX 6.5.3 can add generated series description or user-added manual descriptions. |
| Keyboard Shortcuts | Yes | Keyboard shortcuts are migrated for users, and system keyboard shortcuts are migrated for the entire site. |
| Top toolbar, Context toolbar | No | The default configurations for the toolbars are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Cine toolbar | No | The default configurations for the toolbars are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Screen Formats | No | The default configurations for the screen formats are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Default ERMF Settings | No | ERMF Settings are not migrated. ERMF calibration is now applied by default to studies of the selected modality. |
| Default Tool | No | The default tool is based on roles in IMPAX 6.5.3. |
| Default Tool Scope | No | The default tool scope is based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Default Study/Series View modes | No | The default study/series view modes for the screen formats are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Strict Hanging protocols | No | Strict Hanging protocols are standard with an IMPAX 6.5.3 license. |
| User Profile (default toggle settings) | No | The user profile (default toggle settings) are based on roles in IMPAX 6.5.3. |

| User preferences | Migrated? | Details |
|---|-----------|---|
| Configurable Study Save | No | Configurable Study Save tool settings are controlled in the user profiles in IMPAX 6.5.3 and must be redefined. |
| Markup Statistics | No | Markup Statistics are controlled in the user profile in IMPAX 6.5.3 and must be redefined. |
| Modality Preferences | No | User preferences for a specific modality are controlled by user profiles in IMPAX 6.5.3 and must be redefined. |
| Window Level Presets | No | The default configurations for the Window Level presets are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Display Annotation Text | No | The feature is enabled with a study-based operation assigned to a permission. |
| Link Tool defaults (Nav, W/L, Zoom/Pan) | No | The default configurations for the link tool defaults are based on roles in IMPAX 6.5.3 and can be configured by the administrator. |
| Spine Annotation labels | No | The Spine Annotation tool is enabled only when a series containing axial images is displayed. |
| Saved Window positions | No | Docking Scout and floating palettes settings are controlled in the user profiles in IMPAX 6.5.3 and must be redefined. |
| Snapshots | No | In IMPAX 6.5.3, snapshots are saved to a scheduled worklist. |
| Worklists - Active Worklist settings | No | Standard Worklists now contain multiple Boolean searches to compile the search results. |
| Text area | | |
| Canned Study Comments | Yes | Study comments functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Canned Keywords | Yes | Keyword functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Study data (Database migration) | | |
| Markup | Yes | Markup is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Teaching Files | Yes | The database table is the same in both versions. The administrator must make the data compatible with IMPAX 6.5.3. |
| Tabs | Yes | Tabs are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Window Level | Yes | Window Level is consistent between IMPAX 5.2 and IMPAX 6.5.3. |

| User preferences | Migrated? | Details |
|--------------------------------|-----------|--|
| Magnification | Yes | Magnification is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Geometry | Yes | Geometry is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Image Calibration | Yes | Image Calibration is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Rearranged Images | Yes | Rearranged Images are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Summary Series | Yes | Summary series created in IMPAX 5.2 are migrated to IMPAX 6.5.3; however, users can only view the migrated summary series and cannot edit the migrated summary series. |
| Keywords | Yes | Keyword functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Study Comments | Yes | Study comments functionality is consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Teaching Files - Folder access | No | IMPAX 5.2 teaching file folders are migrated to IMPAX 6.5.3, but the permissions to access these folders are not. To allow users to view the teaching files, the PACS Administrator must manually configure the access to each teaching file folder. |

| Station settings | Migrated? | Details |
|--|-----------|--|
| Configure area - Stations * | | |
| Video Card Settings | Yes | Video card settings are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Monitor Layout, Calibration, Extended settings (NEMA, Pixel Size, JL Cooper jog shuttle) | Yes | Monitor layout, calibration, and extended settings are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Barcode Settings | Yes | Barcode settings are consistent between IMPAX 5.2 and IMPAX 6.5.3. |
| Memory Configuration | No | Memory configuration has changed for IMPAX 6.5.3 and must be redefined. |

* These values are updated when a user logs into a particular IMPAX Client workstation for the first time.

Running osql to access SQL Server data

D

The osql utility can be used to access and change data in instances of SQL Server. This command prompt utility can execute one or more SQL statements and can either display the results of a query, or save the results in a text file.

Use the osql utility to enter Transact-SQL statements, system procedures, and script files. The utility uses ODBC to communicate with the server. As of SQL Server 2005, osql replaced the isql utility entirely.

To run osql to access SQL Server data

1. Open a command prompt and type

```
osql -Ulogin_id -Ppassword -Sserver_name
```

where

- **login_id** is the user login ID. It is case-sensitive.
- **password** is a user-specified password. It is case-sensitive. If the **-P** option is not used, you are prompted for a password.
- **server_name** specifies the default instance of SQL Server to connect to or the named instance of SQL Server on that server. If no server is specified, osql connects to the default instance of SQL Server on the local computer. This option is required if you are executing osql from a remote computer.

2. At the prompt, you can type SQL statements and run them interactively (for example).



Note:

As you type SQL statements and press **Enter**, osql caches the statements, but does not run them. To run the cached statements, type **go** at the start of a new line, then press **Enter**.

3. After you have run the last batch of SQL statements, to terminate the utility, type **exit** or **quit** at the start of a new line.

For more information about this utility, refer to Command Prompt Utilities on the Microsoft site ([http://msdn.microsoft.com/en-us/library/aa246885\(v=SQL.80\).aspx](http://msdn.microsoft.com/en-us/library/aa246885(v=SQL.80).aspx)).

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Cygwin

(Topic number: 121758)

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Version 2, June 1991

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Editline 1.2-cstr

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ICU License - ICU 1.8.1 and later

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Oracle® Database

(Topic number: 148001)

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(Topic number: 121761)

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Zlib

(Topic number: 7595)

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Glossary

A

ADAM

Active Directory Application Mode. Directory services for an individual application that controls user login and privilege information.

AE

Application Entity. In DICOM, the AEs are different stations in the enterprise that communicate with one other. Each requires a unique identifier known as the AE title.

all-in-one configuration

A configuration in which the Database, Archive Server, Network Gateway, and Curator Server components are all installed on a single Windows server, along with the Application Server software.

Application Server

Intermediary server between IMPAX Client and IMPAX Server machines. LDAP, Documentation, and other Business Services reside on the Application Server.

archive

A physical device or a file system used for long-term storage and retrieval of studies.

Archive Server

The IMPAX server that manages the archive. The Archive Server handles requests to store studies to the archive and to retrieve studies

from the archive. The Archive Server stores studies in its cache before archiving them to long-term storage.

C

cache

Temporary storage area for data on a computer's local or external hard drives.

CLUI

Command Line User Interface. A command-line tool to help in the service of IMPAX MVF. CLUI allows you to execute SQL statements.

cluster

A networking solution combining two or more otherwise independent computers, enabling them to work together in managing hospital data.

Configure area

Section of the IMPAX Client used by PACS Administrators to set up roles and users, define printers, configure stations, and set certain preferences.

Connectivity Manager

A middleware component in the integration between hospital information systems and other hospital imaging departments. Connectivity Manager also provides connectivity to each modality and the PACS.

containers

In the navigation pane of the Configure area - Stations section, containers hold station containers. Much like a file folder, containers organize station containers into logical groupings. The container itself cannot be configured. Note that containers are surrounded by [square brackets].

Curator

Curator is an IMPAX MVF server component. It is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. These studies can be accessed by remote or local clients.

D

Database Server

Server that hosts the Oracle or SQL database.

DNS

Domain Name System. A general-purpose distributed, replicated, data query service mainly used on the Internet for translating host names into Internet addresses. Also refers to the style of host name used on the Internet, though such a name is properly called a *fully qualified domain name*.

F

firewall

On a local area network (LAN) connected to a larger network, the security system that prevents outside intrusion and that keeps internal information from getting out. Typically, all traffic must pass through the machine on which the firewall is implemented.

H

HIS

Hospital Information System. The database used by a hospital to manage patient information and scheduling.

host name

The host name is a common alphanumeric alias for the IP address of a server.

I

image

A single frame taken by a modality. Certain modalities, such as a CT, MRI, or PET, take consecutive sets of images called *series*. *Studies* are combinations of series or images for a single patient.

IMPAX Client

IMPAX Clients are used to view study images and data. The IMPAX Client integrates PACS, RIS, and reporting applications into a single delivery of information.

IP address

The Internet Protocol address is a numeric address that identifies the station to other TCP/IP devices on the network.

L

LDAP

Lightweight Directory Access Protocol, the technology for storing user names and IDs, passwords, and user-related preferences. This information is stored in an LDAP depository.

license, IMPAX Client

IMPAX Client licenses define which IMPAX features users in a role can be given permission to access. They include standard and optional features. IMPAX Client license files are

installed on Application Servers and are assigned to roles.

log file

A file or set of files containing a record of the actions and modifications made in an application. Service teams use log files during setup and configuration of the system or its components. Logs are also used to diagnose problems. Logging can typically be set to record varying levels of detail.

M

MAC address

Media Access Control address. The unique physical address of each device's network interface card.

mixed-host configuration

In an IMPAX mixed-host configuration, an AS3000 (Oracle) Database Server is combined with AS300 Archive Server and Network Gateway components. This configuration combines the power of the Solaris-based Database Server with the reduced cost of the Windows-based servers for other components.

multi-host configuration

Server configuration in which the Database is installed on a separate computer from the Archive Server. Network Gateway may be installed on yet another server, or it may be installed along with the Database or Archive Server (or both).

multiple IMPAX cluster configuration

In a multiple IMPAX cluster configuration, an IMPAX cluster is linked to one or more other IMPAX or external PACS clusters, such that patient and study data can be shared and synchronized between them.

MVF

The software framework used for the development of IMPAX. Refers both generally to the Agfa IMPAX PACS system and specifically to the name of the IMPAX Server database.

N

network

A group of computers, peripherals, or other equipment connected to one another for the purpose of passing information and sharing resources. Networks can be local or remote.

Network Gateway

The Network Gateway is part of the IMPAX MVF cluster. Essentially, this is the workflow manager of the IMPAX 6.0 and later system. The Network Gateway controls the studies coming into the cluster from an acquisition station, validates these incoming studies against information from the HIS or RIS, and routes the validated studies to cache or archive.

O

operations, IMPAX

The IMPAX actions allowed by a permission. For example, operations include dictation, printing to paper, and executing SQL statements through CLUI. You can further refine some operations by setting a study status flag on the operation. For example, you can allow printing only on dictated studies.

P

PACS

A Picture Archive and Communication Systems (PACS) makes it possible to electronically store, manage, distribute, and view images.

permissions, IMPAX

Permissions define the available IMPAX features and types of studies that users in a particular role have access to. Permissions are made up of a set of operations.

preferences

Configurable options in IMPAX that can be set to accommodate the preferred workflow of defined groups or individuals.

privilege level

A particular set of features and functions that limit or extend the capability of the system. Each user is assigned a privilege level.

production server

The permanent IMPAX Server—the one that remains in place after the training server is reconfigured and the traveling server removed.

protocol

Language in which two systems communicate. For example, DICOM, HL7, and SQL are all protocols.

R**remote station**

Any station that can be accessed over the network. A PACS, display station, HIS, RIS, or CIS are examples of remote stations. In an enterprise solution, remote stations may also be thought of as those connecting to the network through the Internet, rather than through any direct in-hospital or on-campus connections.

RIS

Radiology Information System. Responsible for scheduling exams and for report management in the Radiology department.

role

A collection of users or other roles that holds IMPAX Client permissions and preferences as well as licensing options. For example, a role can represent the enterprise, the institution, a department, or a team.

S**single-host configuration**

A configuration in which the Database, Archive Server, and Network Gateway server components are all installed on a single server.

single-server configuration

An IMPAX single server is a Windows server that runs the AS300 Server software in a single-host configuration along with the Application Server and Connectivity Manager software.

standalone configuration

In an IMPAX standalone configuration, the IMPAX AS300 Server, Application Server, and Client software are all installed on the same Windows server.

station containers

In the navigation pane of the Configure area - Stations section, the station containers are like folders that organize groups of stations. You can set configuration options for the station containers, and all stations within that container inherit those configuration options.

stations

Within the context of the IMPAX Client configuration interface, refers to a computer that has the IMPAX Client installed. Stations can be in a radiology reading room, in the offices of clinicians, or in the homes of radiologists, for example. When a user logs into IMPAX for the first time, the computer name is listed in the navigation pane of the

Configure area - Stations section. Stations are organized under station containers. You can set configuration options, such as diagnostic monitor settings, memory usage, and so on, for a specific station, or the station can inherit its configuration from the station container.

T

TalkStation

TalkStation is voice recognition software that can be integrated with IMPAX. TalkStation can convert spoken speech to typed text without having to go through a transcription phase.

Text area

Component of the IMPAX Client that displays study, order, and report information.

training server

A system used to train users on IMPAX 6.5.3 as well as migrate user accounts, passwords, and preferences from previous versions of IMPAX. When a traveling server is not used, this server may also be used as a temporary report repository. The training server is intended to operate in non-clinical mode.

traveling server

An AS3000 server running a version of IMPAX, shipped to the site approximately two to four weeks prior to the upgrade weekend. Incoming studies are routed to this server to create a temporary study data repository. It can also house reports migrated from PACS Broker. This server becomes the production server during the upgrade weekend, greatly reducing site down time.

V

volume

A volume refers to the division of data on the media. For example, if a tape has two sides, each side is referred to as a separate volume.

W

wavelet compression

Compression method using a proprietary compression algorithm that can be uncompressed only by systems that support that proprietary algorithm.

web cache

Images that have been compressed by Curator are stored in the web cache. These images are compressed using Mitra Wavelet compression to reduce their size for access over low bandwidth.

wizard

Wizards are used to automate processes. Wizards perform a predetermined sequence of actions after they are selected and applied.

worklist

A collection of patients and their studies. For radiologists, the worklist is analogous to a pile of film jackets. They use the worklist to know which studies they must interpret during a specific time period. For technologists, a worklist is a list of the studies they must perform at specific times for each patient.

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